

**SUPPLEMENTAL
ENVIRONMENTAL ASSESSMENT and
FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

Providing information on the



Pentagon Memorial

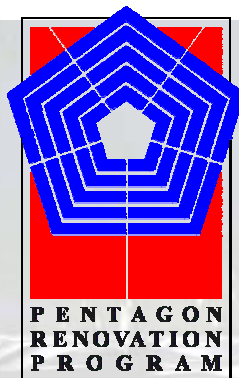
Supplementing the
Final Environmental Assessment of May 28, 1991
for the
Master Plan Final Report of May 28, 1991

Prepared for:

Department of Defense
Washington Headquarters Services
The Pentagon

Prepared by:

Pentagon Renovation Program
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PENTAGON MEMORIAL, PENTAGON WEST WALL SITE
Pentagon Reservation

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Responsible Agency:
DEPARTMENT OF DEFENSE
Washington Headquarters Services

Prepared By:
DEPARTMENT OF DEFENSE
Washington Headquarters Services
Pentagon Renovation Program

Abstract

The Department of Defense, Washington Headquarters Services, Pentagon Renovation Program has prepared a Supplemental Environmental Assessment (SEA) to evaluate the effects of the proposed Pentagon Memorial in accord with the National Environmental Policy Act of 1969, as amended (NEPA, 42 U.S. Code 4321 to 4370b), Council of Environmental Quality (CEQ) implementing regulations (Title 40, Code of Federal Regulations, Parts 1500-1508), and DoD Instruction 4715.9, Environmental Planning and Analysis. The SEA is tiered to the Pentagon Reservation Master Plan Final Report of May 28, 1991 and the Final Environmental Assessment of May 28, 1991, developed for the comprehensive renovation of the Pentagon. The SEA identifies the purpose and need for the proposed action, alternative analysis of potential sites, and environmental consequences of the proposed action. Environmental consequences examined include potential impacts on air quality, noise, hazardous materials, natural/ecological features, land use and socio-economics, transportation, urban systems, and cultural resources.

The proposed action associated with the Pentagon Memorial involves construction of a Memorial Park commemorating the September 11, 2001 terrorist attack on the Pentagon and the 184 lives lost in the Pentagon and on American Airlines Flight 77. The proposed action, as directed by Congress, will be constructed within the limits of the Pentagon Reservation.

Comments on the SEA should be sent to:

Pentagon Renovation Program
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Family Members,

We, the Family Steering Committee for the Pentagon Memorial, want to inform you of an important decision that was reached at a Memorial meeting with the Pentagon Renovation Program on April 9, 2003.

After a presentation by Michael Yopp, the Design Manager for the Pentagon Memorial on design changes, the Family Steering Committee has decided to place a "Design Lock" on the Memorial designed by Kaseman Beckman Amsterdam Studio.

This decision was crucial to the construction of the Pentagon Memorial. The Design Lock is a formal acceptance of the winning design and a dedication to preserve its profound intent and characteristics throughout the construction phase.

The Pentagon Renovation Program (PENREN) will be initiating in the near future a "Family Feedback Portal" where we as family members can have questions addressed directly by the appropriate Project Team member. The team includes staff from PENREN, Office of the secretary of Defense (OSD), Washington Headquarters Services (WHS), Family Steering Committee (FSC), Julie Beckman & Keith Kaseman of Kaseman Beckman Amsterdam Studio (KBAS) and the as yet to be determined construction company.

It is very important to note that a "Design lock" has been placed on such exceptional memorials as the Vietnam Veteran's Memorial; Maya Lin, Concept Designer and The Oklahoma City National Memorial; Hans Butzer, Torrey Butzer, and Sven Berg, Concept Designers.

We, the FSC, feel the Project team is sincere in its desires to keep us involved in the construction phase. It is truly an honor to be working on the Pentagon Memorial and we hold all the Project Team members in high regard.

God Bless America.

Sincerely,

The Family Steering Committee

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This document is a Supplemental Environment Assessment (EA) to the May 28, 1991 Final EA of the Pentagon Reservation Master Plan. Mr. David O. Cooke, Director of Administration and Management, signed the Finding of No Significant Impact (FONSI) for the Pentagon Reservation Master Plan on June 14, 1991. [APPENDIX A]

This Supplemental EA addresses the **Pentagon Memorial** (Memorial), to be constructed within the limits of the Pentagon Reservation.

1.0 PURPOSE AND NEED FOR PROPOSED ACTION

1.1 Introduction

The Pentagon lies in southeastern Arlington County, Virginia and serves as Headquarters for the Department of Defense (DoD). The Pentagon houses the Offices of the Secretary of Defense, the Joint Chiefs of Staff, and the Secretaries of the three military departments. The Pentagon building, at 6.5 million gross square feet, is three times the size of the Empire State Building. Approximately 23,000 employees, both military and civilian, pass through the 17.5 miles of corridors every day.

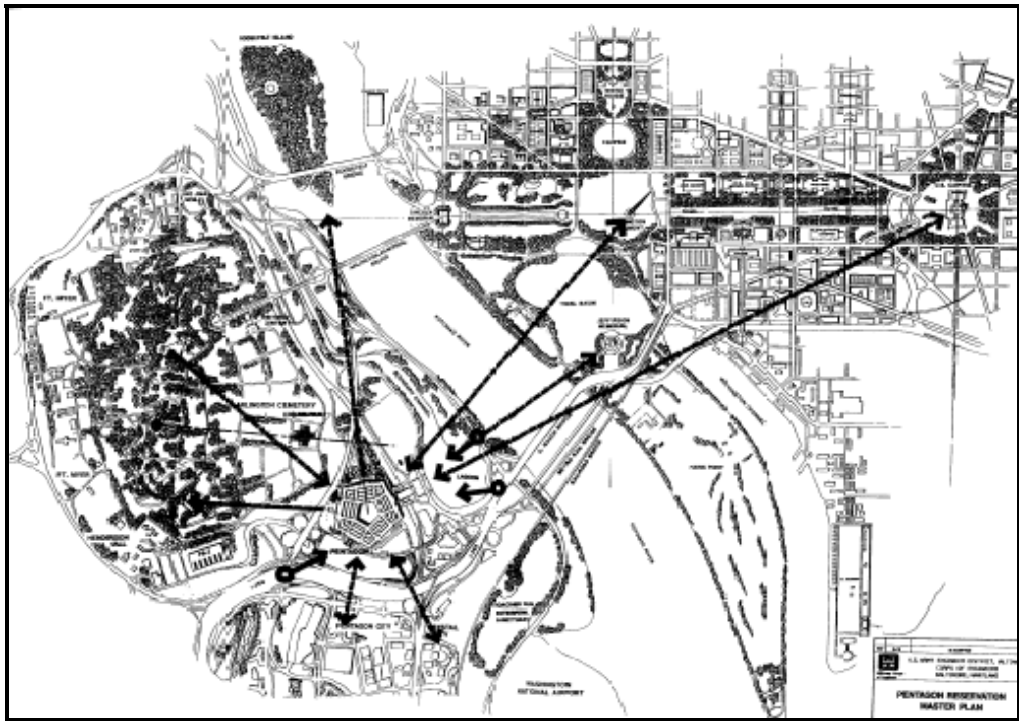


Figure 1 – The Pentagon – Relationship to the Washington DC Monumental Core

The Pentagon was built during the rapid expansion of the U.S. military prior to World War II. Ground was broken on September 11, 1941, and construction was complete sixteen months later in 1943. To this day, the Pentagon is recognized internationally as the largest low-rise office building in the world.

1.1.1 Pentagon Reservation Master Plan and Environmental Assessment of 1991

By 1990, time and heavy use had placed an increasing burden on the building's components and support systems, which had gradually deteriorated to the point of considerable concern. The requirements of both new technologies and of staff considerations over the years dictated a comprehensive renovation program to bring the condition of not only the building and its services, but also the Reservation as a whole, to a level that could support a flexible and intelligent office building environment and site.

The extent of these requirements, which involved proposals for construction on the site as well as changes to the Reservation infrastructure, prompted the need to develop a Master Plan for the Pentagon Reservation.

The DoD evaluated the Pentagon Reservation Master Plan pursuant to the National Environmental Policy Act of 1969, as amended (NEPA), and determined that the preparation of an Environmental Assessment (EA) was required.

The Final EA presented on May 28, 1991 documented that there would be no significant impacts to the human and/or natural environment as a result of the proposed Master Plan Reservation improvements. The proposed improvements at that time included:

- Numerous transportation facility improvements, including expansion of the existing bus terminal;
- Construction of a 660, 000 gross square foot Logistics Support Extension (LSE);
- Relocation of the Day Care Center;
- Construction of a new Heating and Refrigerating Plant; and
- Site Development, including modifications to existing landscaping.

1.1.2 Pentagon Renovation Program

Washington Headquarters Services (WHS) was established under Title 10, United States Code, on October 1, 1977 as a Department of Defense (DoD) Field Activity to provide operational support to specified DoD activities in the National Capital Region (NCR). In this role, WHS assumes the responsibility for planning and management of DoD-occupied space in the NCR, including the Pentagon. The Secretary of Defense has delegated authority for exercising jurisdiction, custody, operation and control of the Pentagon Reservation to the Director of WHS.

The Program Manager for the Pentagon Renovation Program (PENREN) is responsible for implementing design and construction activities at the Pentagon Reservation related to the Renovation of the Pentagon as well as other projects as assigned.

PENREN is proceeding with major renovations in accordance with the Pentagon Reservation Master Plan. Since the publication of the Final EA, many of the planned projects have either been constructed or are currently undergoing construction. Some of the planned projects that were revised prior to construction are as follows;

- The DoD did not build the proposed Logistics Support Extension (LSE); instead, DoD built the Remote Delivery Facility (RDF), a substantially smaller and limited facility, on the same site; and
- The Metro Entrance Facility (MEF) realized the proposed plan to expand the existing bus terminal by constructing not only a new facility, but also a new secure entrance to the Pentagon Building.

A number of other projects for the ongoing renovation of the Pentagon have either been completed or in progress. Completed projects include renovation of portions of the Pentagon basement and of the Heating and Refrigeration Plant. The renovation and then subsequent recovery of Wedge 1, the Remote Delivery Facility (RDF), and the Metro Entrance Facility (MEF) are essentially complete. Renovation of the remaining aboveground portion of the Pentagon (Wedges 2-5) is underway, as is the design-build project for a new Pentagon Athletic Facility. Construction has recently begun on the Pentagon Secure Bypass and the RDF Secure Access Lane, projects initiated following the terrorist attack of September 11, 2001 to reconfigure roadways and vehicle control points around the Pentagon Reservation to eliminate vulnerabilities to the DoD mission by increasing the standoff distance between unsecured roadways and the Pentagon.

1.2 Purpose and Need for Proposed Action

On September 11, 2001, American Airlines Flight 77 took off from Washington Dulles International Airport with 64 people aboard, bound for Los Angeles. In flight, five terrorists hijacked the plane and crashed it into the west face of the Pentagon. The crash resulted in the murder of the 59 passengers and crewmembers aboard the aircraft, as well as 125 military service members and civilians within the Pentagon. Many others suffered injuries. A large section of the Pentagon eventually collapsed and had to be completely rebuilt.

In December 2001, Congress enacted Public Law 107-107, also called the National Defense Authorization Act for Fiscal Year 2002 (Act). Section 2864 of the Act provides authorization for a Memorial. [APPENDIX F]

“The Secretary of Defense may establish a memorial at the Pentagon Reservation dedicated to the victims of the terrorist attack on the Pentagon that occurred on September 11, 2001.”

1.3 Planning for Proposed Action

The effort to create a memorial at the Pentagon was initiated by family members of the victims. Following the attack on the Pentagon, as family members attended informational meetings and worked with casualty assistance officers, some became involved in the planning process for a memorial.

On November 30, 2001, about a dozen family members met for the first time with staff of the United States Army Corps of Engineers (USACE). This group, called the Family Steering Committee (FSC) established the tone for the process ahead, “we have one chance to do it right.” The FSC would be dedicated to the memorial and ensure that the voices of the victims’ family members would be heard throughout the process.

1.3.1 Competition to Select the Concept Design

On December 27, 2001, the Director of WHS signed a Support Agreement, which engaged USACE to provide for planning, site selection, design and related technical services leading to the completion of a design competition for the Memorial.

The USACE-led planning for a two-stage competition (Competition) to select a concept design for the Memorial was an inclusive process involving representation and participation from a variety of governmental agencies, local planning commissions, and family members of the victims.

The FSC remained engaged in the Competition process, meeting with USACE staff to ensure the families’ interests were represented in all steps of the planning process. Notably, FSC members participated in the evaluation and selection of the memorial site, wrote a moving family statement for the Competition Program, and held two seats on the Competition Jury.

1.3.2 Site Selection

A location within the limits of the Pentagon Reservation was chosen to establish the site parameters for the Competition. [Indicated in FIGURE 2 by star] The Site Selection Process is described in Section 2.2 of this report.



Figure 2 – The Pentagon – Competition Site

1.3.3 Program Objectives and Requirements

The Stage One Competition Program, known as the “*Call For Entries*” (hereafter referred to as the Program), provided the objectives and requirements for the design of a memorial to the victims of the September 11, 2001 terrorist attack on the Pentagon. The families of the victims wanted the memorial to address not only the loss of those murdered at the Pentagon, but the dedication to the principals of liberty and freedom that this terrible event re-awakened in people around the world. Competitors were challenged to create a design that must:

- Speak generally, serving as the U.S. government’s official response;
- Represent all Americans; and
- Embody the deeply personal tragedy that the events of September 11, 2001 inflicted upon the families of the victims.

The Program dictated no specific requirements governing the size, form, or materials for the Memorial, other than the following considerations:

- No memorial should be tall enough to strike the Pentagon, should the memorial for any reason fall toward the building, which sits 165 feet east of the easternmost edge of the site; and
- Anything taller than the Pentagon itself (approximately 78 feet high) will face review by the Federal Aviation Administration, since the site is in an approach path to Ronald Reagan Washington National airport.

The Program further stated that the Memorial should not contain fully enclosed rooms, spaces, or means of conveyance. In addition, there could be no functions ancillary to the Memorial (no museum, interpretive center, theater, restrooms, etc.), and no staff present.

1.3.4 Competition Milestones

- June 11, 2002
USACE launches Stage One of the Competition with the issue of the Competition Program, “*Call For Entries*” (Program), and the establishment of September 11, 2002 as the deadline for submission of entries.
- August 23, 2002
Deadline for Registration – USACE received registration interest from all 50 states, the District of Columbia, Puerto Rico, and 50 countries representing six continents.
- September 11, 2002
Deadline for Stage One Submissions - 1,126 entries meeting competition rules go on to jury evaluation.
- September 30 to October 2, 2002
The Jury met in Washington, DC to select six finalists to advance to Stage Two.

- February 21, 2003
The Jury met again in Washington, DC to choose the final concept design from among the six finalists.
- March 3, 2003
The winning concept design by Keith Kaseman and Julie Beckman was announced at the Pentagon on March 3, 2003, ending the Competition phase of the Memorial project. [APPENDIX C]

WHS has identified PENREN as the construction agent for the Memorial.

1.4 Description of Proposed Action

1.4.1 Project Site

The location of the Project Site is within the Pentagon Reservation. [APPENDIX B]
Activities associated with the project will take place on two (2) distinct, but adjacent areas- the Memorial Park and the Memorial Gateway. [FIGURE 3]

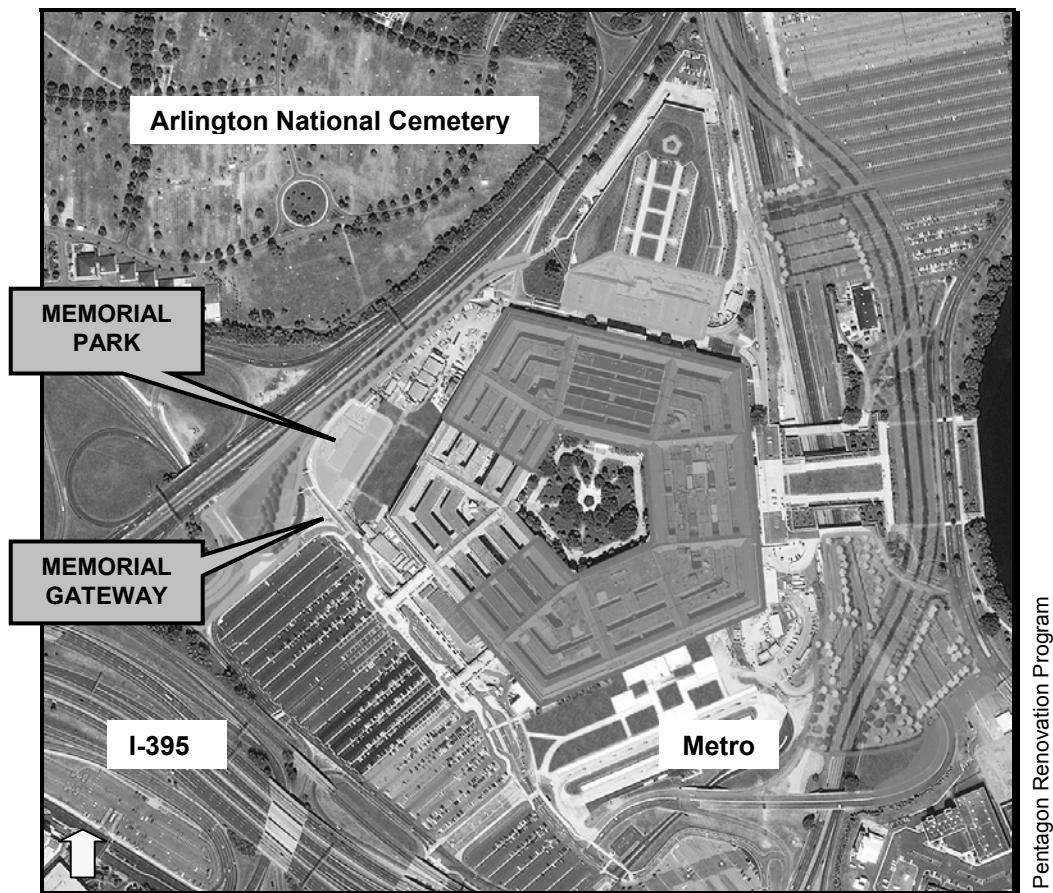


Figure 3 – The Pentagon Reservation - Project Site

1.4.1.1 Memorial Park

- Established the site parameters for the USACE competition for a concept design;
- Is located 165 feet west of the Pentagon building in an area bounded by the RDF Secure Access Lane (under construction), the South Parking Lot, and an open area (formerly a heliport, currently utilized as construction staging for the renovation of Wedges 2-5);
- Is within clear view of the point at which flight 77 struck the building (the flight path crosses directly over the site along an easterly vector); and
- Consists of approximately 1.93 acres.

1.4.1.2 Memorial Gateway

- Is located directly adjacent to the Memorial Park's southwest boundary;
- May be the location for Project staging and contractor support activities;
- May be the location for an underground vault serving as an Equipment Control Center (ECC) for the Memorial Unit pool water circulation system; and
- May include an interpretive board, entry sign, benches, and drinking fountains as visitor amenities.

1.4.2 Project Concept Design

The Concept Design is for a Memorial Park. At the collective heart of the Pentagon Memorial is the individual **Memorial Unit**. 184 Memorial Units, each dedicated to an individual lost on September 11th, are to be strategically organized and placed across the approximately 2-acre site. [FIGURE 4] Each Memorial Unit is a complex yet elegantly simple element that performs several tasks and is several things at the same time. It is an individual reflecting pool of water that glows with light at night, the place for the permanent inscription of each individual victim's name, a place to sit and place mementos. The seating surface of each bench will be made of a polymer-gravel mix, ground to a smooth finish. Its slender cantilevered form and the Memorial Unit's multidimensional integrity are rooted in the fabrication of its form. [FIGURE 5]



Figure 4 – Concept Design – Memorial Park

KBAS

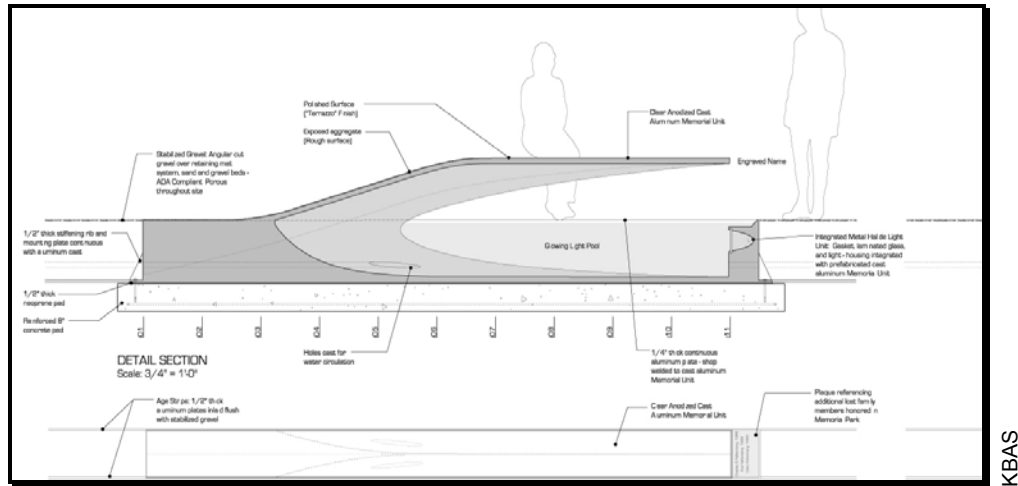


Figure 5 – Concept Design – Memorial Unit

Oriented along the trajectory of American Airlines Flight 77, and spanning the site from perimeter to perimeter, the **Age Lines** are the organizational strategy of the Memorial Park. Each Age Line represents a birth year of the 184 victims. Organized along each Age Line, the placement of an individual Memorial Unit is based upon the birth date of the victim. These lines ultimately serve as the “directory” or “map” with which the visitor will locate the individual Memorial Units. [FIGURE 6]

The directional orientation of the units will provide the visitor additional information, distinguishing those who were onboard American Airlines Flight 77 from those who were inside the Pentagon.

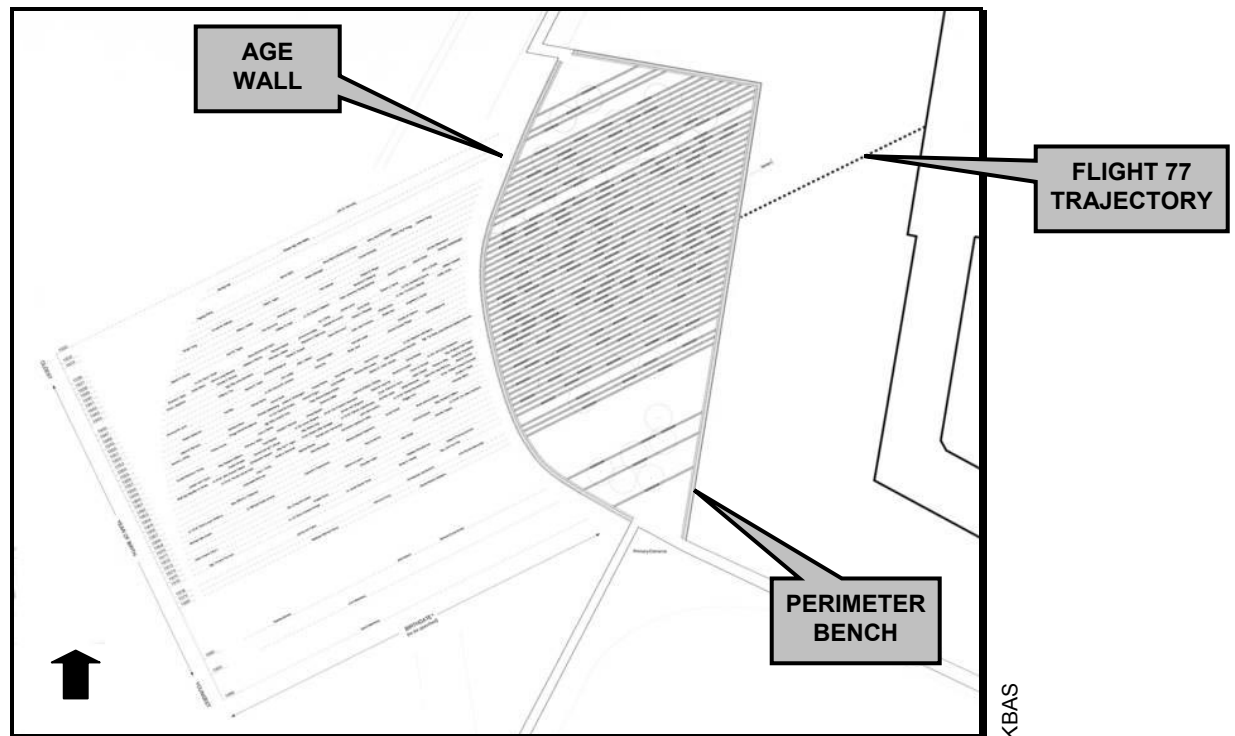


Figure 6 – Concept Design – Site Plan

The **Age Wall** runs along the western edge of the site and its purpose is dual-fold. The growing height of the wall corresponds to the growing birth years as one moves south to north within the Park - this serves as an indicator of the site's organization to those passing by along the adjacent highways. At the same time, the age wall reaches its tallest dimension as the RDF Secure Access Lane encroaches upon the Memorial Park, hence serving as a necessary buffer between the quiet contemplative environment of the Park and the movement and noise of the adjacent roadways. [FIGURE 6]

The **Perimeter Bench** provides a continuous and smooth seating surface for visitors to the Memorial. The Perimeter Bench also serves as a planter for ornamental grasses, acting as a soft screen demarcating the boundary of the park. The 1/2" thick aluminum Age Lines that organize and demarcate the site continue up the vertical face and over the horizontal seating surface of the bench. [FIGURE 6]

A ground cover of stabilized gravel is intended to contribute to the sensuous, tactile environment of the Memorial Park. The gravel is hard enough for one to roll a wheelchair or stroller over, yet loose enough for the visitor to hear his/her own footsteps and the footsteps of others nearby. The porous quality of stabilized gravel system allows for two things; first, the trees can be planted and grow without a visible protective grating at the base of the tree trunk; and second, it is intended to assist in keeping the site as flat/planar as possible.

A grove of trees is intended to provide a vivid canopy of color and light and shade throughout the site. To create an intimate environment, the maximum appropriate number of trees will be clustered in accordance with the Memorial Units, providing a comfortable amount of shade to each Unit, while allowing enough sunlight to penetrate the canopy, creating dynamic lacey shadows on the ground. [FIGURE 7]



KBAS

Figure 7 – Concept Design – Grove of Trees

2.0 ALTERNATIVE ANALYSIS

2.1 No Build

The No Build Alternative was not considered.

2.2 Alternatives

The Pentagon Memorial Site Selection Report dated January 30, 2002 [APPENDIX D] and the Pentagon Memorial Site Evaluation Summary dated March 2, 2002 [APPENDIX E] document the site selection process, evaluation considerations, and descriptions of the ten (10) Considered Sites for the Pentagon Memorial.

2.2.1 Evaluation Considerations

- Family acceptability
- Proximity to the impact area
- View of the impact area
- Public accessibility
- Site availability (as of summer 2002)
- Security
- Site size (ideally one to two acres)
- Utilities and geotechnical factors
- Noise and activity level at site
- Focal point
- Visual and physical context of the site (good views to and from memorial)

2.2.2 Considered Sites

- Site A Metro Entrance Facility (MEF), southeast side of Pentagon
- Site B River Terrace, facing the Potomac River to the east
- Site C Remote Delivery Facility (RDF), north side of Pentagon
- Site D Impact Area, west side of the Pentagon, close to South Parking Lot
- Site E In the South Parking Lot adjacent to the south side of the Pentagon
- Site F Traffic cloverleaf on the east side of Route 27, between the South Parking Lot and Route 27
- Site G Traffic cloverleaf on the west side of Route 27, between the gas station and the impact site
- Site H Traffic median on the west side of Route 27, between the gas station and the impact site
- Site I Navy Annex (FB-2), near location of the proposed Air Force Memorial
- Site J Patton Circle in Arlington Cemetery

Because of its visual access and proximity to the impact site of the terrorist attack, Site D was chosen as the Preferred Site. In the words of a member of the Family Steering Committee, “The site was selected on September 11.”

The Preferred Site was approved by Mr. David O. Cooke, Director of Administration and Management and Director, WHS on April 19, 2002.

2.2.3 Regulatory Approval of Preferred Site (Memorial Park)

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations 36 CFR 800, the *Pentagon Memorial Site Selection Report* was submitted to the Commonwealth of Virginia Department of Historic Resources (State Historic Preservation Office –SHPO) on July 2, 2002. The SHPO made a determination on July 3, 2002, that the Preferred Site would have **No Adverse Effect** on the historic significance of the Pentagon building. [APPENDIX F]

Approval of the Preferred Site was granted by the Commission of Fine Arts at its June 20, 2002 meeting. [APPENDIX F]

Approval of the Preferred Site pursuant to Section 5 of the National Capital Planning Act of 1952, as amended (40 U.S.C. 71d) was granted by the National Capital Planning Commission (NCPC) at its July 11, 2002 meeting. [APPENDIX F]

3.0 ENVIRONMENTAL CONSEQUENCES OF PROPOSED ACTION

As previously stated, the Pentagon Reservation is currently undergoing a massive reconstruction program, which includes a total renovation of the building interior and its support systems, as well as several ancillary projects on the Reservation grounds.

All memorial construction will take place on land, previously disturbed, either during construction of the Pentagon, by modifications to the adjacent roadway system, or through reconstruction and staging efforts associated with the Phoenix Project following the September 11, 2001 terrorist attack.

It should be noted that, since the original Master Plan and the Final EA, the government has not changed the natural environment; therefore, impacts to many areas addressed in the 1991 EA do not need to be reevaluated at this time. For information concerning these issues, please refer to the May 28, 1991 Final EA.

3.1 Air Quality

The project is primarily a landscape composition containing no habitable space, heating, ventilation, or roadway alterations. No new air quality analysis needs to be conducted in order to assess the air quality impact of the memorial.

3.2 Noise

As with most urban settings, the Pentagon Reservation currently is subject to background noise. Two major contributors to the existing background noise are vehicular and air traffic. During peak traffic periods, as well as when precipitation occurs, major roadways surrounding the Pentagon Reservation amplify traffic noise. Air departures and arrivals from nearby Ronald Reagan Airport also contribute to the existing background noise.

This project will not affect any of the current sources of noise pollution, since no changes will be made to the current land use of the site.

3.3 Hazardous Materials

Consistent with the 1991 EA, the Memorial will not utilize any hazardous materials.

3.4 Natural/Ecological Features

Consistent with the 1991 EA, there are no additional Natural/Ecological impacts to the surrounding environment. All construction proposed for the project will occur on previously impacted land. No excavation for the project will extend deeply enough to

penetrate beneath the fill material brought over to the site during original building construction, thus impacts to archaeological and anthropological sites are not foreseen. During construction, all Commonwealth of Virginia standards, codes, and policies will be adhered to regarding erosion and sediment control.

After the 1991 FONSI, the Executive Order entitled *Federal Support of Community Efforts Along American Heritage Rivers, September 11, 1997* created the American Heritage Rivers Initiative. The Potomac River has been designated as such a river. The Potomac River is approximately 3/4 mile east of the Memorial site. The Boundary Channel and Lagoon, a large parking lot, VA 110, and the Pentagon separate the Memorial from the Potomac River. The Boundary Channel and Lagoon is approximately 1/2 mile from the Memorial.

Any development that may affect an American Heritage River must comply with the Community Action Plan. The Community Action Plan for the Potomac River has three broad goals:

- Continued improvement in the water quality and environmental restoration, along with development of effective flood control plans;
- Promotion of the region's rich historical heritage and recreation opportunities; and
- Involvement of citizens at local levels.

Neither the proposed construction nor operation will be in conflict with the Community Action Plan and therefore will not cause any significant impact to the Potomac River.

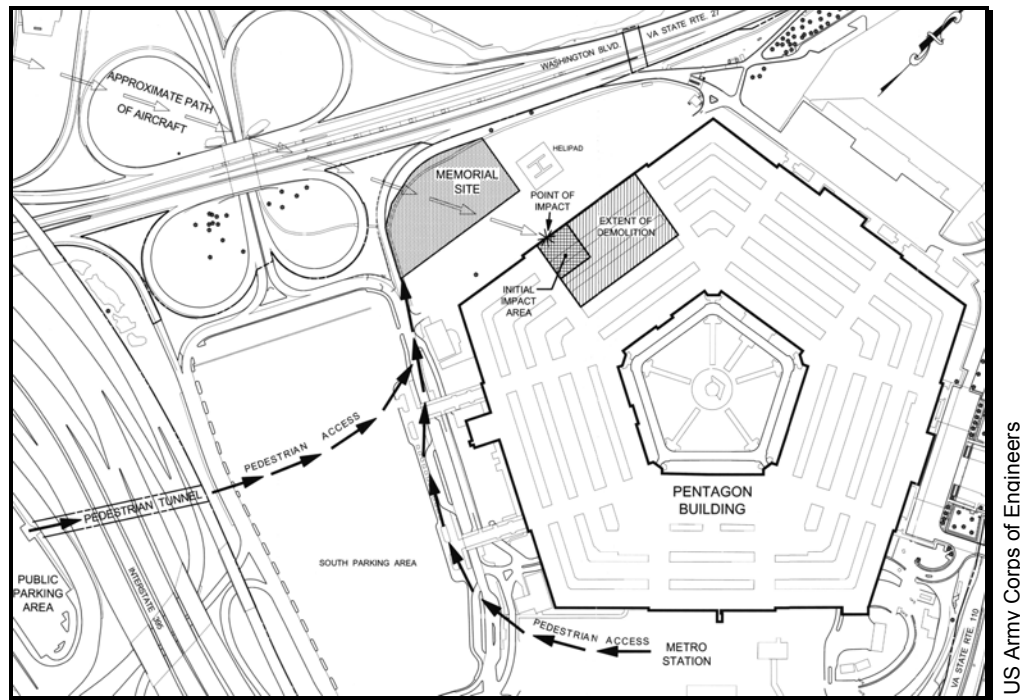
3.5 Land Use and Socio-Economics

Areas surrounding the Pentagon include primarily developed land and vehicular roadways. The Pentagon Reservation is in view of the Arlington National Cemetery, and more distantly, the National Mall. The memorial site was designated as Open Space in the 1991 EA. The Memorial, lacking habitable or enclosed spaces, is considered a landscape/hardscape composition and is therefore consistent with the 1991 EA.

3.6 Transportation

No modifications or improvements of either roadway or mass transit are required for this project. Pedestrian traffic to the site will remain in its current configuration. Visitors choosing to utilize mass transit to access the memorial will arrive by bus or subway at the Pentagon Transit Center (Metro Entrance Facility) on the Pentagon's southeast side.

Sidewalks connect the Pentagon Transit Center to the memorial site. Visitors may also walk through a pedestrian tunnel under Interstate 395 and across the Pentagon's South Parking lot to access the memorial site. [FIGURE 8]



US Army Corps of Engineers

Figure 8 – Pentagon Memorial – Pedestrian Access

3.7 Urban Systems

The urban systems at the Pentagon Reservation have been continuously upgraded and modernized throughout the renovation program. Utility companies have been routinely contacted to identify and verify changes to services at the Pentagon Reservation since the *Revised Technical Report for the Pentagon Complex Master Development Plan* (GSA, 1987) was published. The memorial site includes the following urban systems.

- Water
- Sanitary Sewer
- Storm Sewer
- Steam and Chilled Water
- Electric Power
- Telephone and Communications

3.8 Cultural Resources

The Pentagon is one of the most recognizable United States Government buildings in the world. It has been inseparably linked with the United States Military since its construction during World War II. The Pentagon is listed on the National Register of Historic Places and has been designated a National Historical landmark by the Secretary of the Interior. Five distinguishing elements were cited for special attention:

- The distinctive, equal length, five-sided design;
- The exterior façades;

- The central courtyard and interior façades;
- The terrace at the Mall Entrance (Mall Terrace); and
- The terrace at the River Entrance (River Terrace).

The eastern boundary of the memorial site is 165 feet from the façade of the Pentagon that was destroyed in the terrorist attack of September 11, 2001. No natural or man-made obstructions currently exist between the memorial site and this façade that was rebuilt as part of the Phoenix Project.

Although the memorial will have no direct impacts to any of the five distinguishing elements, its significance and proximity to the site of a recent national tragedy requires coordination, as directed by Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA). Coordination was initiated by USACE prior to the start of the competition to select a concept design. Approval for the Preferred Site, also known as the Memorial Park, has been granted in accordance with NHPA. (See Section 2.2.3) Coordination for approval of the Memorial Gateway site will be concurrent with the initial submission of the winning concept design. [APPENDIX C]

The following Federal and State agencies, departments and private organizations are already involved in the coordination of this project:

- The Commonwealth of Virginia Department of Historic Resources (State Historic Preservation Office-SHPO)
- The National Capital Planning Commission
- The Commission of Fine Arts
- Office of the Secretary of Defense, Office of Family Policy
- Pentagon Memorial Family Steering Committee
- Department of the Army
- Department of the Air Force
- Department of the Navy
- Pentagon Force Protection Agency
- Pentagon Renovation Office
- United States Army Corps of Engineers
- Arlington County Department of Community Planning, Housing and Development
- Arlington National Cemetery
- The Air Force Memorial Foundation
- Arlington County 9/11 Memorial

Coordination and consultation will continue in subsequent phases of the project. All required approval submittals and presentations will be made in order to ensure compliance with NHPA and its implementing regulations.

4.0 CONCLUSIONS

The Pentagon Memorial Family Steering Committee had challenged the concept designer(s) by asking them to “create a memorial that translates this terrible tragedy [the September 11, 2001 terrorist attack on the Pentagon] into a place of solace, peace, and healing.”

The Memorial Park will be constructed on an area of the Pentagon Reservation designated as Open Space in the Pentagon Reservation Master Plan and in the Final Environmental Assessment of May 28, 1991. The park, lacking habitable or enclosed spaces is considered a landscape/hardscape composition and is therefore consistent with land use defined in those documents.

This Supplement considered and evaluated all areas in the May 1991 Final EA with special attention to:

- Air quality;
- Exterior noise;
- Natural/ecological impacts;
- Land use and socio-economic impacts;
- Transportation and access; and
- Impacts to Cultural Resources.

These areas have the highest potential to adversely effect the human and/or natural environment.

The May 1991 Final EA evaluated the impacts to historic resources, waterways, wetlands, wildlife, and protected species and habitats. This supplement did not reanalyze these areas for memorial. Since the memorial will be built in a previously disturbed area designated as open space, it is unlikely that there will be any further impacts to these resources.

Based on this Supplemental Environmental Assessment, I conclude that construction of the Memorial will create no significant direct or indirect adverse impact on the human and natural environment, and that the Finding of No Significant Impact already published concerning the Pentagon Reservation still pertains with regard to this effort.

APPROVED: _____ DATE: _____

Name of Responsible Official: _____

Title: _____

**Finding of No Significant Impact (FONSI)
Supplement Review**

For the

Pentagon Memorial

to be constructed within the limits
of the Pentagon Reservation.

In accordance with the National Environmental Policy Act and the policies of the Department of Defense, implementing the regulations of the Council on Environmental Quality (40 CFR 1500-1508), I find that the project described in the Supplemental Environmental Assessment dated April 14, 2003 is not a major Federal action significantly affecting the quality of the human environment. Therefore, no Environmental Impact Statement will be prepared.

This review supplements and affirms the Finding of No Significant Impact (FONSI) for the Pentagon Renovation Master Plan dated June 14, 1991. That finding was based on an Environmental Assessment dated May 28, 1991. [APPENDIX A]

This action is based on the Supplemental Environmental Assessment dated April 14, 2003 for the Pentagon Memorial on the Pentagon Reservation.

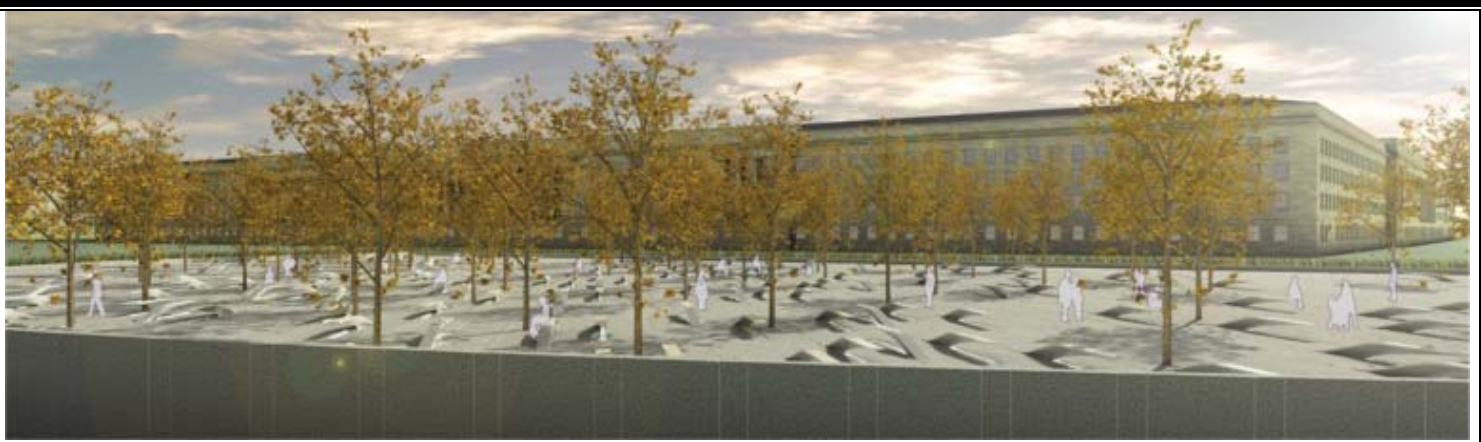
APPROVED: _____ DATE: _____

Name of Responsible Official: _____

Title: _____

APPENDICIES

- A Finding of No Significant Impact (FONSI)**
Pentagon Reservation Master Plan, June 14, 1991
- B Project Site Plan**
Pentagon Reservation
- C Stage Two Submission, Entry #1717**
Pentagon Memorial Design Competition
- D Pentagon Memorial Site Selection Report, January 30, 2002**
U.S. Army Corps of Engineers, Baltimore District
- E Pentagon Memorial Site Evaluation Summary, March 2, 2002**
U.S. Army Corps of Engineers, Baltimore District
- F Regulatory Record**
- Public Law 107-107, Section 2864 (National Defense Authorization Act for Fiscal Year 2002)
 - Commonwealth of Virginia SHPO “No Adverse Effect” determination for the Preferred Site
 - PENREN Request to Virginia SHPO for “No Adverse Effect” determination for Memorial Design and Memorial Gateway Site
 - PENREN Application to Virginia SHPO for Project Review
 - Commission of Fine Arts (CFA) approval of the Preferred Site
 - PENREN Request to CFA for Concept Approval of Memorial Design and Memorial Gateway Site
 - National Capital Planning Commission (NCPC) Staff Report and Approval of the Preferred Site
 - PENREN Request to NCPC for Concept Approval of Memorial Design and Memorial Gateway Site
- G References**
- H Design Criteria / Design Program**



Pentagon Memorial

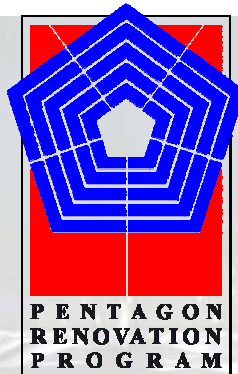
Finding of No Significant Impact (FONSI) **Pentagon Reservation Master Plan** **June 14, 1991**

Prepared for:

Department of Defense
Washington Headquarters Services
The Pentagon

Prepared by:

Pentagon Renovation Program
100 Boundary Channel Drive
Arlington, VA 22202-3712



SEA appendix A



Administration
& Management

OFFICE OF THE SECRETARY OF DEFENSE
WASHINGTON, DC 20301

14 JUN 1991

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
PENTAGON RESERVATION MASTER PLAN

The Pentagon Reservation Master Plan has a development plan that consists of four major elements:

1. Construction of a replacement Heating and Refrigeration Plant.
2. Construction of a 600,000 gross square foot below grade Logistics Support Extension at the Mall Terrace.
3. Site Development.
4. Renovation of the Pentagon.

An environmental assessment (attached) of the Pentagon Reservation Master Plan has been prepared in accordance with the National Environmental Policy Act and Council on Environmental Quality Regulations.

The Environmental Assessment shows that the proposed development will not have any significant adverse impacts on the human environment. Specifically, the impacts of a replacement Heating and Refrigeration Plant on air quality and the impacts of renovation and modifications to the Pentagon, which is listed on the National Register of Historic Places, will not pose any significant adverse effects.

Four alternatives were considered for the Heating and Refrigeration Plant:

- 1) Repair existing coal-burning facility and equipment.
- 2) Repair existing facilities and replace existing coal-burning equipment with new coal-burning equipment.
- 3) Construct a new oil-and-gas burning facility on the existing site.
- 4) Construct a new oil-and-gas burning facility elsewhere on the Reservation.

Replacement of the Heating and Refrigeration Plant on the present site was determined to be the most satisfactory solution, because of the existing support infrastructure and the availability of cooling water from the Pentagon Lagoon. Early coordination with the Virginia Department of Air Pollution Control has been conducted. Air quality modeling indicates that the new Heating and Refrigeration Plant would not exceed National Ambient Air Quality Standards. A permit will be secured with the Virginia Department of Air Pollution Control to specify the design and condition of operating the plant, and to ensure compliance with Federal and State regulations.

The implementation of avoidance measures or data recovery plans (for significant archeological sites) and implementation of the Secretary of the Interior's Standards and Guidelines (for all historic building renovation) will result in no significant impacts to cultural resources. Early coordination with the Virginia State Historic Preservation Officer has been conducted. The Environmental Assessment has been independently evaluated by the Department of Defense and determined to adequately and accurately discuss the environmental issues and impacts of the proposed development plan. It provides sufficient evidence and analysis for determining that an environmental impact statement is not required.

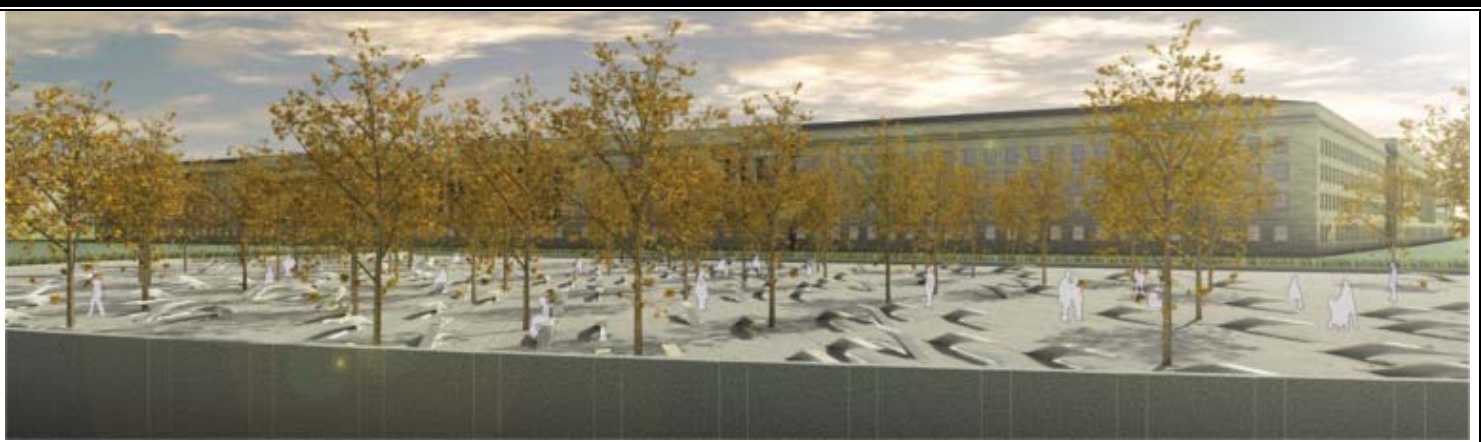
I therefore conclude that development of the Pentagon Reservation Master Plan will create no significant direct or indirect adverse impacts on the human environment.

Information and public comment related to this Environmental Assessment must be forwarded to the following point of contact within 30 days of the publication of this Finding of No Significant Impact:

Mr. Paul Chistolini, Deputy Director
OSD/WHS/Real Estate and Facilities Directorate
Room 3C345, Pentagon
Washington, DC 20301-1155



D. O. Cooke
Director



Pentagon Memorial

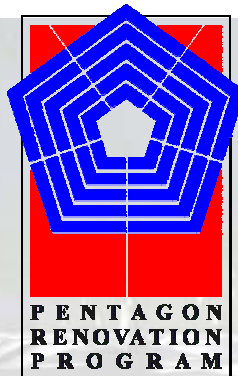
Project Site Plan Pentagon Reservation

Prepared for:

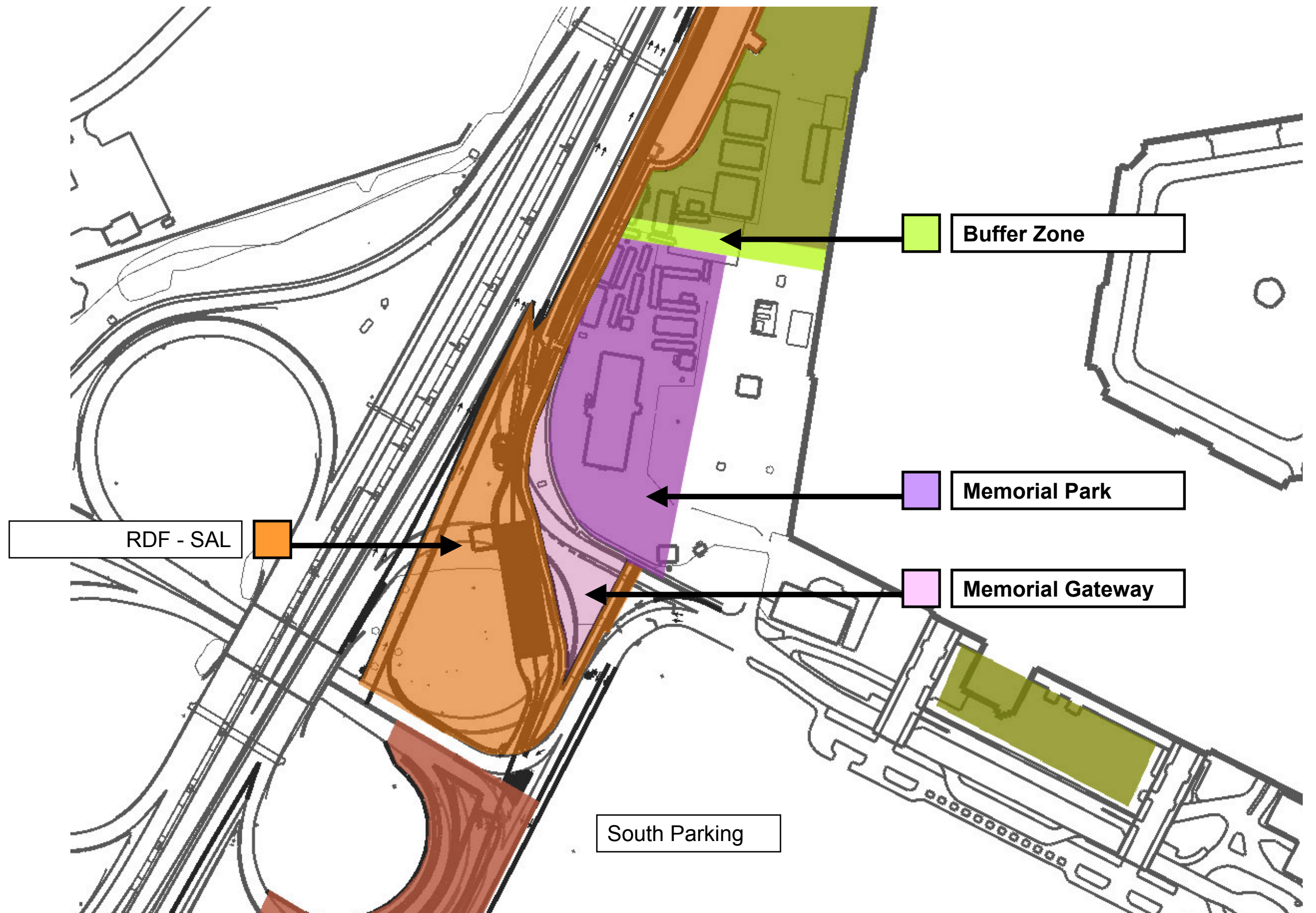
Department of Defense
Washington Headquarters Services
The Pentagon

Prepared by:

Pentagon Renovation Program
100 Boundary Channel Drive
Arlington, VA 22202-3712



SEA appendix B



Pentagon Memorial

Site Plan





Pentagon Memorial

Pentagon Memorial Design Competition Stage Two Submission, Entry #1717

Prepared for:

Department of Defense
Washington Headquarters Services
The Pentagon

Prepared by:

KBAS[®]

KASEMAN BECKMAN
AMSTERDAM STUDIO



SEA appendix C

Statement by Kaseman Beckman Amsterdam Studio (KBAS), New York, NY

One hundred eighty-four lives were lost in a single moment at the Pentagon - one hundred eighty-four individuals forever tied together through the horrific event that unfolded on September 11, 2001.

Thousands of others lost their lives and suffered injury that day while millions wept.

That day was simply incomprehensible. It jolted us into a different world, a tragic reality that just didn't seem real.

This proposal envisions a memorial that simultaneously affords intimate and collective contemplation through silence within a tactile field of sensuous experience. It sets out to permanently record and express the sheer magnitude of loss through an architectural experience of a place radically different than what we encounter in our daily lives. In this light, the space itself serves as the memorial at all scales of experience and engagement - from within, driving by, and from above.

A MEMORIAL PARK is inscribed with one hundred eighty-four MEMORIAL UNITS. Each unit is dedicated to an individual victim - its placement and place within the collective field a unique instance. The field is organized as a timeline of the victims' ages, spanning from Dana Falkenberg, 3 years old, to John D. Yamnicky, 71. While each memorial unit locates itself on its respective age-line, the units are then organized by birth-date along the age-line. This highly specific and qualitatively objective organizational strategy yields seemingly random results. Inherent tendencies - the clustering of certain age groups, the gap between the children and adults - are clearly evident and meaningful, though infinitely interpretive.

Personal interpretation is further sparked by embedding layers of specificity into the orientation of each memorial unit within the expansive site. Fifty-nine memorial units face one way, one hundred twenty five face the other - thus distinguishing victims on board American Airlines Flight 77 from those who were inside the Pentagon. When visiting a memorial dedicated to a victim who was in the Pentagon, the visitor will see their engraved name and the Pentagon in the same view. Conversely, one would see the engraved name of a victim on flight 77 with the sky. Though highly specific, this distinction is quite subtle when deployed consistently throughout the site. It adds a level of difference to the visual and spatial field, thus provoking visitors' curiosity, while simultaneously telling the story of those involved in the events that took place here that day.

Elegant in its self-supporting form, the memorial unit is at once a glowing light pool, a cantilevered bench and a place for the permanent inscription of each victim's name. Using Computer Numerically Controlled (CNC) technology common to the aerospace industry, the cast, clear-anodized aluminum memorial unit is easily mass-produced and incredibly articulate. The cast aluminum prototype/detail model was fabricated in this manner. Its structural cross-section not only reflects radiant light from the glowing pool of water onto the surrounding gravel field, but also allows that field to be continuous. A polyester composite matrix-gravel mix is poured into the memorial unit, thus acting as a glue to support and float the gravel above the light pool. This surface is polished to attain a "terrazzo" finish at the horizontal bench portion of the memorial unit. As the memorial unit grows out of the ground, the stabilized gravel field is interrupted only by moments of glowing light and water, and the engraved names float above these moments.

Though loose enough to hear and feel footsteps upon it, stabilized gravel is a hard, ADA-compliant surface. Disbursed throughout the entire site, the porous stabilized gravel field

is contained within two perimeter benches that serve as planters for ornamental grasses. These grasses act as a soft screen demarcating the boundary of the memorial park. Further, the combined length of the perimeter benches plus the bench portion of each memorial unit provides more than 2,100 linear feet of polished "terrazzo" seating surface. Birth years, used to locate the age lines, are inlaid aluminum numbers set flush with the "terrazzo" finish of the perimeter benches. The birth years are flanked by the aluminum age lines that permeate the whole site.

The western edge of the site is defined with the AGE WALL - a wall that "grows" in height one inch per year relative to the age lines that organize the site at large. As one moves deeper into the site the wall gets higher - it grows from 3 inches above the perimeter bench (at Dana's memorial age-line) to 71 inches above the bench (at John's). Strategically, this wall grows, as a barrier is needed between the memorial park and the delivery lane that encroaches the site at its northwestern edge. Experientially, this wall communicates the organizational strategy to the drivers passing by on the freeway, while still allowing them to peer into the site from afar. From within the site it provides a shadowy backdrop for the lacy ornamental grasses that are planted along its base.

A vivid canopy of color and light provides shade throughout the site, as trees are clustered in conjunction with the disbursement of memorial units. Three varieties of maple trees could serve this scheme well - the Trident Maple, Field Maple (in renderings) and the Paper Bark Maple. All three exquisite trees are late falling, retaining their beautiful fall foliage well into the winter months - this suspension of time will contribute to the sublime beauty of this place. On an intimate level, the interplay between leaves, light, bark, gravel, grasses, water, and the senses will be greatly enhanced with any of these elegant trees.

DESIGN TEAM

Kaseman Beckman Amsterdam Studio (KBAS), New York, NY:

Julie Beckman and Keith Kaseman, design principals

Consulting Engineers:

James Rowe - Structural, New York

Dr. Gerald Palevsky - Environmental, New York

Prototype Fabrication:

Techno-Craft, Bloomfield, NJ

Renderings:

KD Lab, New York

Laser Cutting Services:

SANY (Studio Associates of New York)

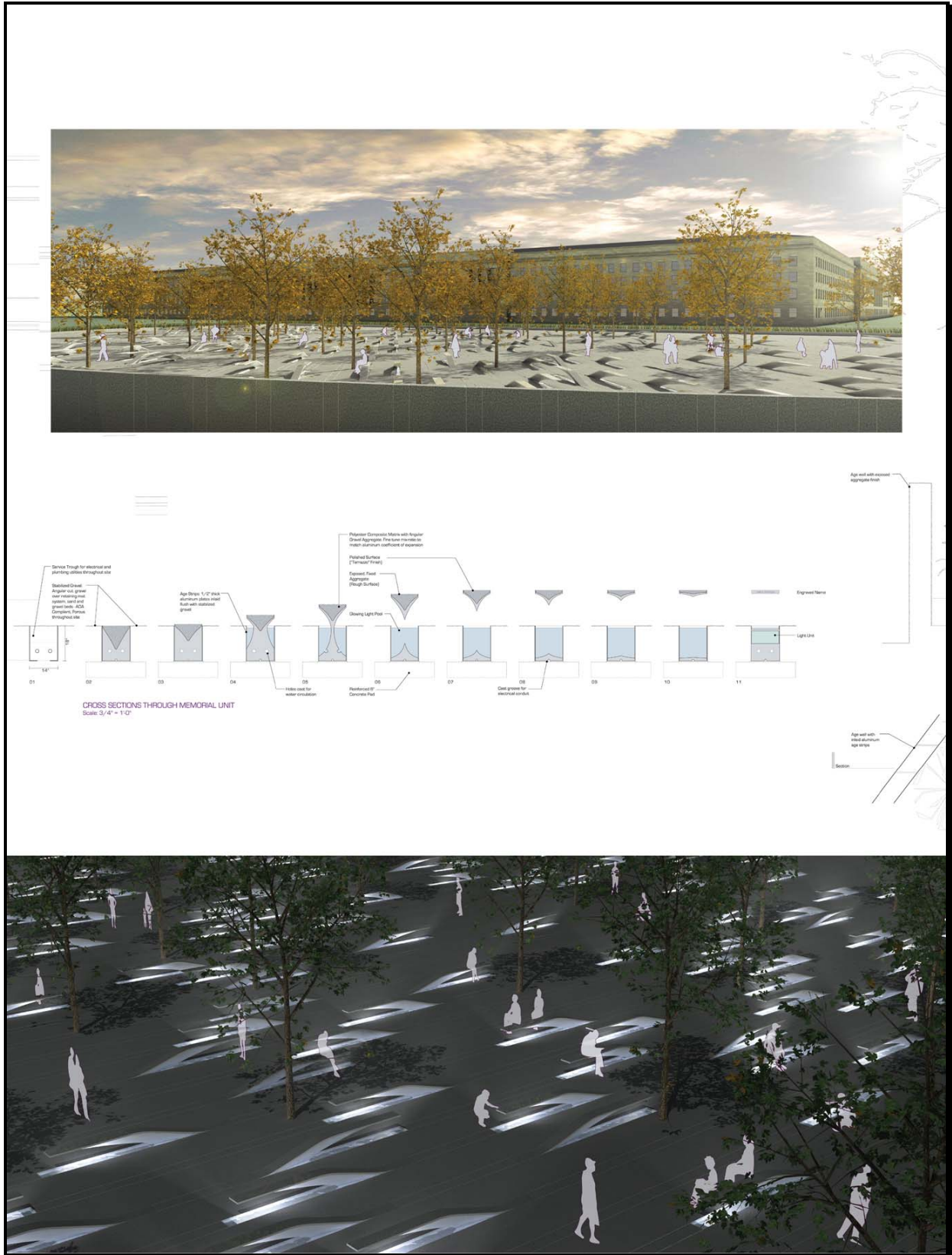
Printing Services:

Merrimac Productions, New York

Production Support:

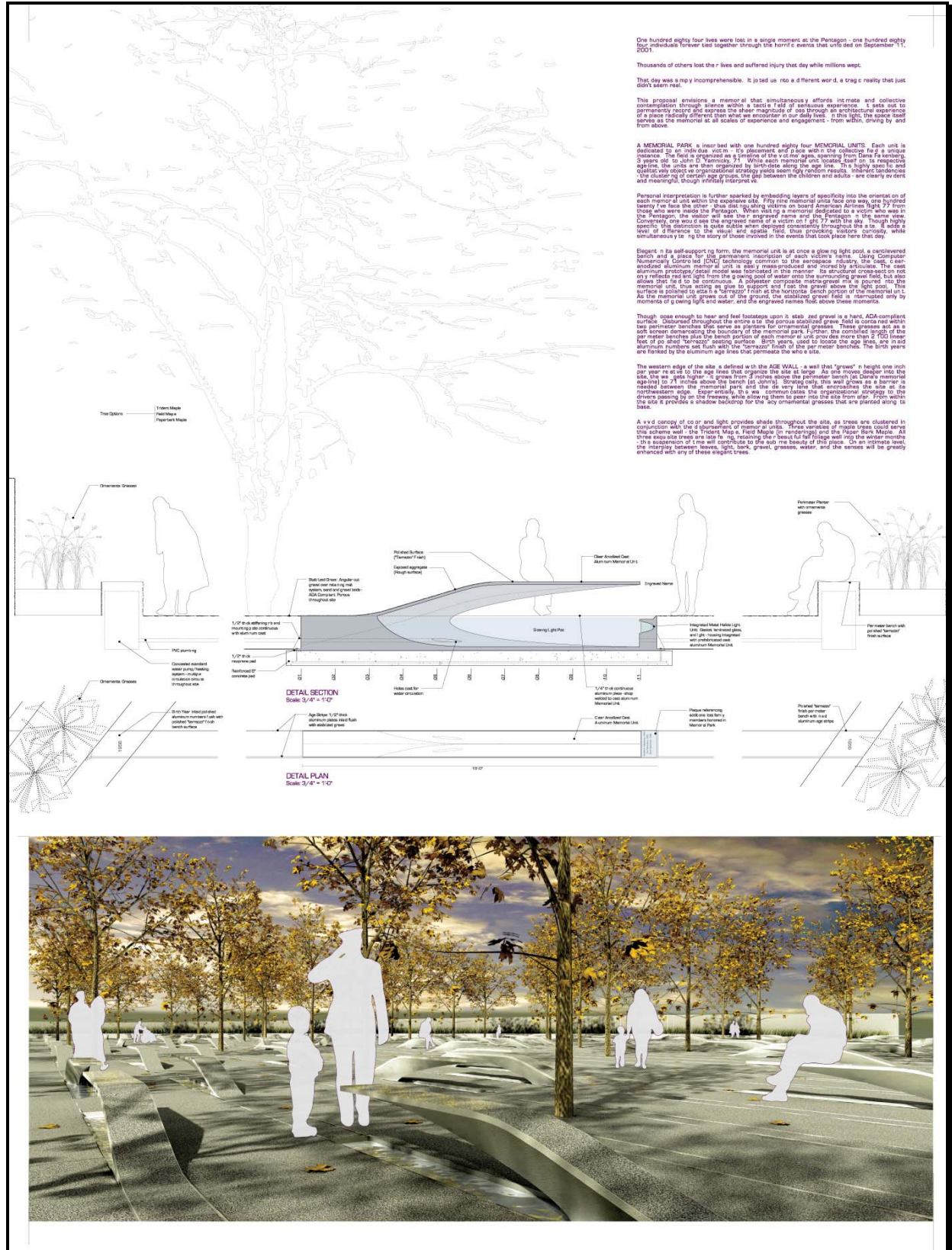
Mark Taylor, New York

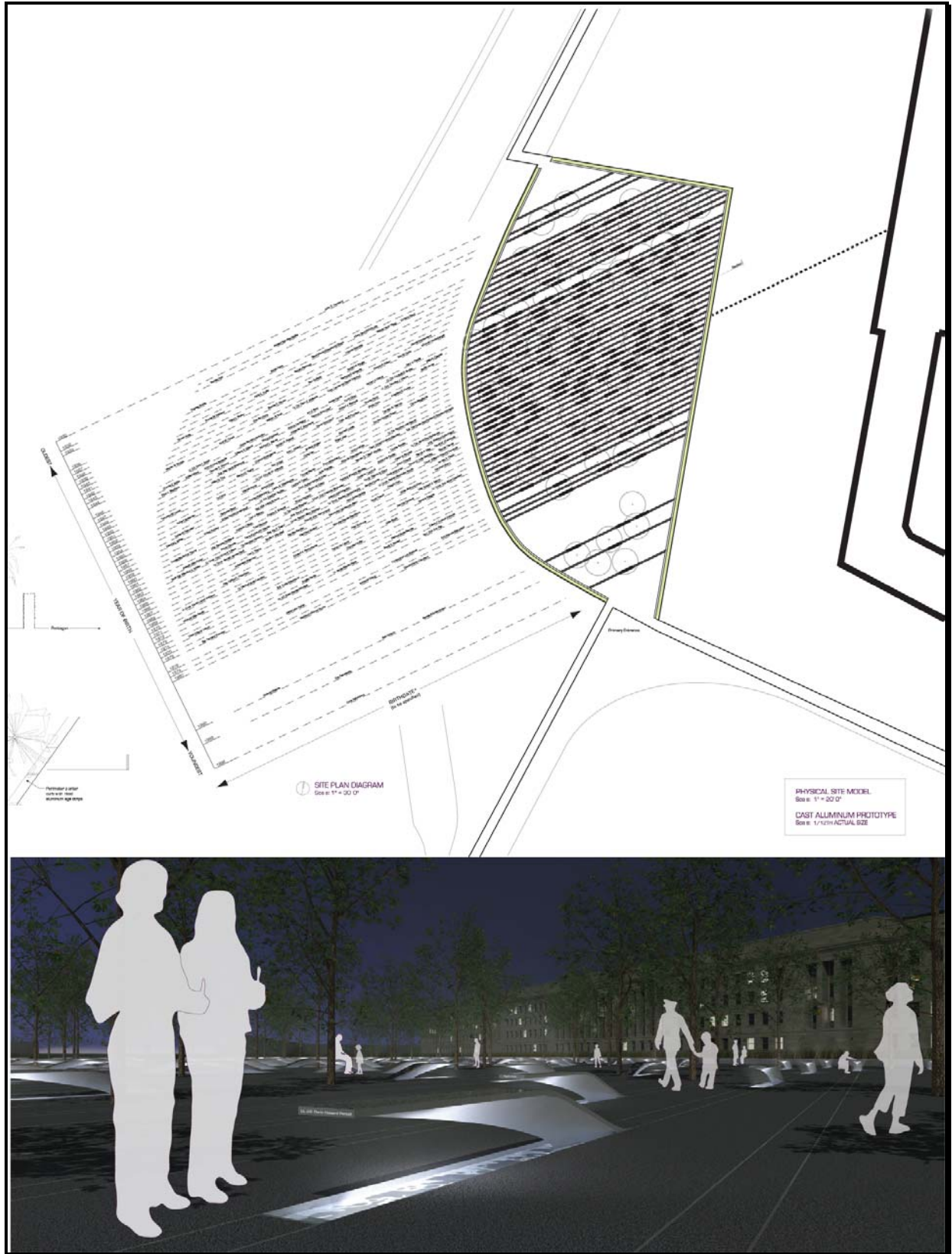
Mark Ours, New York



Board 1

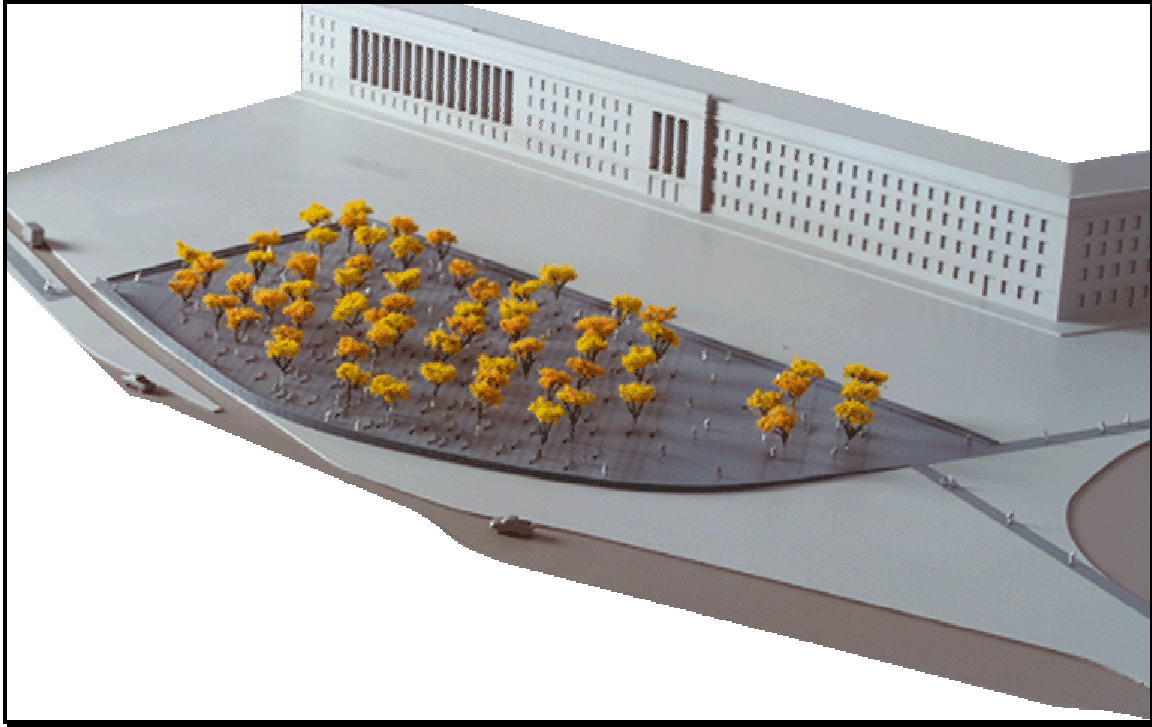
Provided by KBAS



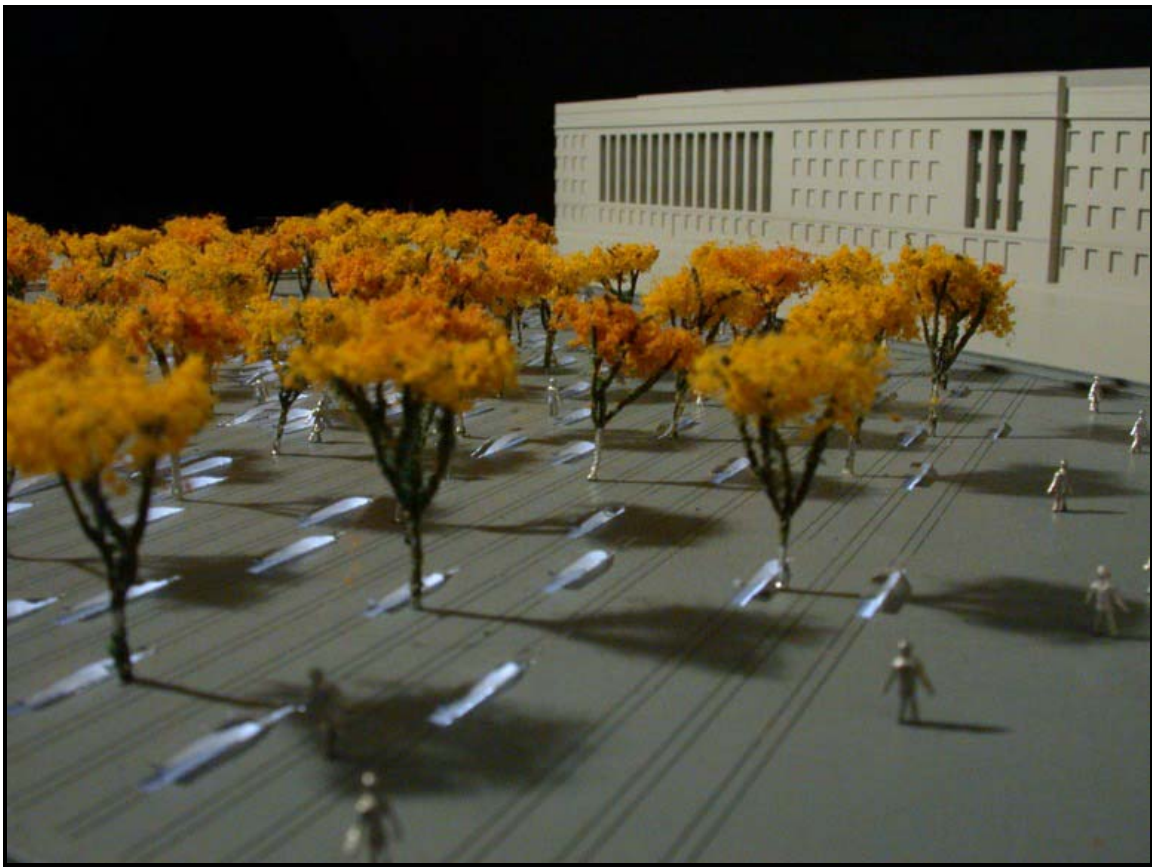


Board 3

Provided by KBAS



Model of the Memorial Park



Model Close-up of Age Lines and Memorial Units



Model of the Memorial Park



Detail Model of a Memorial Unit



Pentagon Memorial

Pentagon Memorial Site Selection Report January 30, 2002

Prepared for:

Department of Defense
Washington Headquarters Services
The Pentagon

Prepared by:

US Army Corps of Engineers
Baltimore District



Pentagon Memorial

Site Selection Report



**US Army Corps
of Engineers ®**
Baltimore District

January 30, 2002

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Executive Summary

Background

Following the September 11 attack on the Pentagon, the Director of the Washington Headquarters Services assigned the mission of constructing a Pentagon Memorial to the U.S. Army Corps of Engineers. The memorial was to commemorate the 184 victims lost on September 11, be modest in scale, and located on the Pentagon reservation.

Research

The Corps began research and coordination activities in mid-October. By the end of January, several coordination meetings had been held with the National Capital Planning Commission and the Commission of Fine Arts. The project team also conducted meetings and site tours for both the Focus Group and for the Family Steering Committee and briefed a number of Corps and Pentagon officials.

Process

The Focus Group includes representatives from the military services and Pentagon offices, Arlington National Cemetery, approval agencies, and a professional advisor. The Focus Group provides technical expertise and practical input to the project. The Family Steering Committee includes approximately a dozen representatives of the victims' families and works with the project team to provide the families' perspective.

Among the first tasks to be addressed by the project team was the identification of an appropriate memorial site. The project team developed a list of considerations to guide the site selection process. The considerations include issues such as family acceptability, visual and physical access to the impact site, security, utilities, noise, and future plans for the use of each site. A preliminary list of six sites was developed in the early weeks of the project and grew, as coordination was accomplished, to the ten sites evaluated in this report.

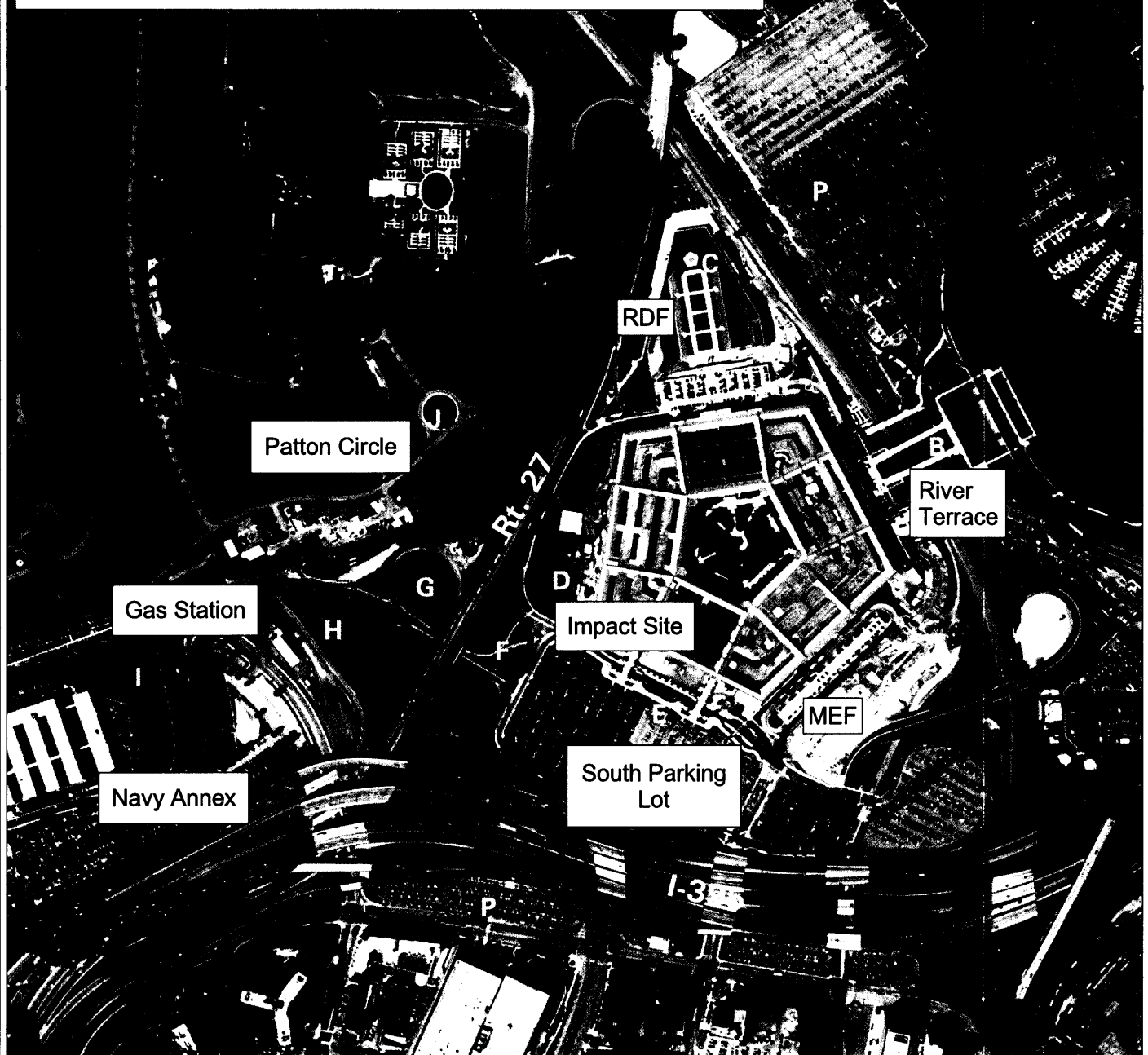
Every site nominated has both positive and negative characteristics. Sites with the most serious obstacles to their use were quickly dismissed during the evaluation process. Several of the sites evaluated can be described as having limited potential for a memorial site, and one site is recommended.

Recommendation

The recommended memorial site on the west side of the Pentagon has both positive and negative characteristics, however, the positive characteristics of the site far outweigh the negative. Because of its visual access and location close to the Impact Site, the recommended site is the only truly appropriate site among the ten sites evaluated.

In the words of a member of the Family Steering Committee, "The site was selected on September 11."

- Site A - The Metro Entrance Facility (MEF)**
- Site B - The River Terrace**
- Site C - The Remote Delivery Facility (RDF)**
- Site D - The Impact Site**
- Site E - South Parking Lot**
- Site F - East side of Cloverleaf, near South parking lot**
- Site G - West side of Cloverleaf, near ANC**
- Site H - West Side of Cloverleaf, near Gas Station**
- Site I - Navy Annex near proposed Air Force Memorial**
- Site J - Patton Circle / Arlington National Cemetary**



**US Army Corps
of Engineers**
Baltimore District

Possible Memorial Sites Evaluated

Site Selection Process

What the memorial should be and where it should be located were the two questions addressed by project participants during the earliest days of the project. Preliminary discussions resulted in a consensus that the memorial should be on Pentagon property but the team also explored sites that were not on, but close to the Pentagon reservation.

Evaluation Considerations

Project participants identified a number of considerations that began to define what the memorial and the site should be. As the project moved forward and sites were added or locations modified, the list of considerations was also redefined to better reflect the pros and cons of the possible sites. The considerations used to evaluate each of the sites in this report include the following:

1. Family Acceptability. The site should be the one preferred by the families of the victims.
2. Proximity to the Impact Area. The memorial site should be as close to the Impact Area as possible.
3. View of the Impact Area. The memorial should have a good view of the Impact Area.
4. Public Accessibility. The site must be accessible to visitors arriving on foot, by Metro, car, bus, and bicycle. The site must be accessible to handicapped persons and have parking facilities.
5. Site Availability. The site must be authorized for a memorial, and a portion of the site made available for site preparation and construction beginning in the summer of 2002.
6. Security. The site must be capable of security management, the system to be developed as required and to suit the needs of the memorial.
7. Site Size. The site should be an appropriate size for a memorial, landscaping, and accommodate gatherings and ceremonies (estimated size is one to two acres).
8. Utilities and Geotechnical Factors. Underground utilities, soil stability, and other physical factors of the site should accommodate development of a memorial.
9. Noise and Activity Level at site. The site should be able to be designed and developed to provide a feeling of peace and tranquility.
10. Focal Point. The site should have physical characteristics suitable for creation of a Memorial that is the focal point of the space.
11. Visual and Physical Context of Site. The site should provide a memorial location that is compatible with surrounding development, existing or proposed. The site should provide a positive visual experience from a distance and on approach, both by pedestrians and from vehicles, and it should allow undesirable views from the site to be screened.

Sites Evaluated

Identifying of the best location for the proposed memorial involved evaluating a number of potential sites and selecting the one that best met the requirements of the considerations. The project team accepted suggestions for possible sites in the earliest weeks of the project and added new sites as the project progressed. Some of the ten sites in the final list had negative characteristics that would have been difficult to overcome, such as not being owned by the Pentagon. In order to reflect the comprehensive approach of the project team, even the difficult sites are evaluated in this report.

The ten sites evaluated in this report include the following:

Site A - Metro Entrance Facility (MEF), southeast side of Pentagon

Site B - River Terrace, facing the Potomac River to the east.

Site C - Remote Delivery Facility (RDF), north side of Pentagon.

Site D - Impact Area, west side of the Pentagon, close to South Parking Lot.

Site E - In the South Parking Lot adjacent to the south side of the Pentagon, currently a restricted area.

Site F - Traffic cloverleaf on the east side of Route 27, between the South Parking Lot and Route 27

Site G - Traffic cloverleaf on the west side of Route 27, between Arlington National Cemetery and Route 27

Site H - Traffic median on the west side of Route 27, between the gas station and the impact site.

Site I - Navy Annex (FB-2) - near location of the proposed Air Force Memorial.

Site J - Patton Circle in Arlington National Cemetery.

Site Evaluations

Site A - Metro Entrance Facility (MEF)

The initial appeal of the MEF to project team members was based on its accessibility and the high visibility of a memorial at the site. Thousands of bus and Metro riders streaming through the MEF every day on their way to work and home would view the memorial. The MEF is a new facility, designed and landscaped to provide an attractive entrance experience for Pentagon employees and visitors. Landscaped berms, constructed in the space between the bus canopies and the building, provide a natural green border for the movement of commuters moving between the buses and the building. The high use of the area suggests that security issues would not be a problem at this site.

Negative factors far outweigh the positive at the MEF. Although the site has many visitors, they are moving fast and the site is designed to facilitate that movement. A memorial at the MEF would have to be glanced at quickly as people moved past. Longer contemplation would require a new traffic pattern or result in pedestrian traffic jams. The project team felt that if a memorial were placed out of the way of traffic at the site, it would seem somewhat incidental and it would be difficult to create the sense of peace and tranquility that should be a key characteristic of the memorial. Parking at the MEF would also be difficult, with the closest visitor parking located at the Hayes Street Parking Lot. The site provides no visual connection to the impact site.

Site B - River Terrace

The River Terrace is an elegant site, with several levels that provide an almost unobstructed view of the Potomac and Washington's principal monuments. The area is relatively tranquil, especially near the river, and the area close to the Pentagon is used for formal ceremonial and informal athletic activities. In its present configuration there is enough room to create a memorial at the site and limited space along the lagoon for visitor parking.

The major drawback of the River Terrace site is the lack of visual or physical connection to the impact site. Its location on the opposite side of the building provides no clue that an attack ever occurred and a memorial at this site would require substantial interpretation and still appear to be inappropriately sited. If a memorial were placed at the River Terrace and the current uses were maintained, the placement would need to be to one side, rather than in a central location. The result would be a memorial that is somewhat incidental, rather than the focal point of the site. Tentative plans to restructure the River Terrace and move Highway 110 away from the Pentagon, if implemented, could create less desirable site conditions for a memorial. In its present configuration, some additional public parking could be provided along the lagoon, at the cost of more limited riverfront access. In addition to the siting, access, and parking constraints, an important consideration - unique to the River Terrace - is that this area is complete as a place. It serves its present ceremonial purpose well and should be left intact.

Site C - Remote Delivery Facility (RDF)

The above ground surface area of the RDF is a handsome landscaped open space. Following completion of the structure linking it to the Pentagon, employees will be able to use the site like an urban park. Its apex is a perfect place for an important monument. But that location, by its nature, would seem to call for a monument on a heroic scale, visible to fast-moving traffic on the roadways bordering the site.

The purpose of the RDF as a bomb-proof secure delivery area precludes any public access. The site also lacks a visual or physical connection to the impact site, public parking facilities, and other features necessary for a memorial site.

Site D - Impact Site

Site D is located on the west side of the Pentagon, close to the South Parking Lot. The ground on that side of the Pentagon ordinarily provides the largest open grassy lawn at the Pentagon with a heliport located approximately in the center of the space. The center portion of the west wall of the Pentagon was destroyed during the September 11 attack and Site D provides a clear view of that part of the wall. Since the attack, what was formerly the grassy lawn is being used for construction staging.

Positive characteristics of the site include the best visual and physical access to the impact area of all of the sites evaluated, good access to the site itself by pedestrian and vehicular traffic, and the potential availability of additional parking, improved access, and room for additional development in the future. Most important, Site D is the preferred site for members of the Family Steering Committee. Members prefer the site because it has clear visual access to the place where their loved ones "paid the ultimate price," and also is as close as practical to the place where 184 lives were lost.

Constraints at the recommended site include several underground utilities, security management issues common to most of the sites, a heliport located at the center of the site, and the possibility of future road relocations and other proposed development in the area. Current construction activities at the site are an additional, and potentially the most limiting, constraint for this site. Because of its location close to the impact area and the relatively open condition of the west side of the Pentagon, the site is used for construction staging for post-impact reconstruction. Construction activities are scheduled to continue over the next few years until restoration of this side of the Pentagon is complete.

Site E - South Parking Lot

Site E is the portion of the South Parking Lot that is closest to the Pentagon. The area is barricaded off for security reasons and is now an empty paved area. The site has several advantages as a possible location for a memorial: it is accessible to both pedestrians and vehicles, a memorial at that location would complement the two

great stairway entrances on the south side of the Pentagon, and could be available for construction fairly soon.

The major negative aspect of Site E is the lack of visual access to the Impact Site. Visitors to a memorial at Site E would simply continue walking toward the east side of the Pentagon to view the "real" site - where the impact occurred. Tentative plans for future development of new office buildings in this area are another disadvantage to using the site for a Pentagon Memorial.

Site F - East side of cloverleaf, between the South Parking Lot and Route 27

Since Rt. 27 was reopened to traffic and "Camp Unity" completed work, this site has become the unofficial location for a clear view of the Impact Site. The slight elevation of Site F above the ground level of the Impact Site allows visitors to see over the construction-area fencing and into the Impact Site. Visitors to the Pentagon arrive at the Metro station and walk from the MEF, past the South face of the building, cross the cloverleaf roadway, and stand with other visitors to see the side of the building where the attack took place. (This site replaces Site G, the original viewing and informal memorial site, which has been closed.) Site F is closer to the Impact Site and seems safer than Site G because the roadway that encircles it has less traffic.

Negative characteristics of Site F include its ownership by the Virginia Department of Transportation, its location in the center of a cloverleaf, with the normal traffic noise and safety issues of such a site. Other negative aspects include a distinct slope that would need to be addressed in designing the placement of a memorial and gathering areas. Preliminary plans are being developed for the relocation of roads in the area and construction of a new truck route from this area to the Remote Delivery Facility. Conflicts resulting from implementing these plans could be managed by careful coordination during the planning stages of each potential project however, the greater distance to the Impact Site than from than Site D still renders Site F to be substantially less appropriate as a memorial location.

Site G - West side of cloverleaf, between Arlington National Cemetery and Route 27

The site is owned by the Virginia Department of Transportation and is located between ANC and Route 27. The site is somewhat elevated above Site F and the area toward the Pentagon and provides visual access to the Impact Site.

Negative aspects of Site G include its location inside a traffic cloverleaf, with the noise and safety issues inherent in such a location. As with Site F, the greater distance to the Impact Site than from than Site D renders this site to be substantially less appropriate as a memorial location.

Site H - Traffic Median, west of Route 27, near the gas station

Site H has an excellent view of the Impact Site and was well used by visitors and the press in the weeks following the attack. Its elevation above the surrounding areas made it popular for television and other photographic crews.

In spite of its visual access to the impact area, Site H is less preferable as a memorial site than Site D for the same reasons that Sites F and G failed: the risks to pedestrians moving to and from the site and its distance from the Impact Site.

Site I - Navy Annex (FB-2)

Site I is located at the foot of the hill sloping down toward the road in front of FB-2. The site was the closest accessible location to the Impact Site during the weeks immediately following September 11, and was spontaneously selected by the public for viewing the destruction and placing informal memorials. Although the site is "closed," photographers and reduced numbers of visitors still come to the site. The site is an excellent location for a memorial and a location at the top of the hill is the proposed location for the Air Force Memorial. For that reason, Site I was eliminated from serious consideration as a location for the Pentagon Memorial.

Site J - Patton Circle, in the Arlington National Cemetery

The major advantages of the Patton Circle site are its tranquility and the proximity to the graves of many of the September 11 victims. For those reasons several members of the Family Steering Committee initially expressed a preference for this site. There is a clear but somewhat distant view of the impact area in winter when trees bordering Route 27 have lost their leaves. The area provided on the circle and/or the two triangles adjacent to it provide a large enough area for a memorial.

There are several negative aspects of this site that are all fairly equal in importance. Key disadvantages include its location outside the Pentagon reservation and the legal prohibition on placing memorials in the ANC, requiring Congressional authorization for a Pentagon Memorial. Another disadvantage is the use of the Circle as an organizing area for funeral corteges several times a day. In addition, the ANC has preliminary plans to place a group marker for the September 11 victims near the graves, making a Pentagon Memorial at the site redundant. Another negative is the lack of easy access except for family members, who are allowed to drive to the site. Non-related visitors would be required to walk approximately one half mile from the entrance. And finally, and most important, families do not welcome the idea of visitors/strangers "walking on the graves."

The Recommended Site

The recommended site for the Pentagon Memorial, Site D, was selected for reasons that are deeply symbolic as well as completely practical. Its location on the side of the Pentagon where the attack occurred, with full visual access and as physically close as practicable to the spot where 184 victims died, were crucial considerations in its selection. An even more important consideration was that members of the families of victims, as represented by the Family Steering Committee, after carefully weighing many factors, selected this site as the recommended memorial location.

Site D also ranked high in evaluations based on the other considerations.

Public Accessibility - Existing public access to the site is better and safer than at the other nine sites. Currently, visitors arrive at the Metro Station and walk from the MEF to an area close to Site D, but located in the cloverleaf intersection. Existing parking is available at the commercial Hayes Street Parking Lot (on the south side of Interstate 395) or, on week-ends, at the western end of the South Parking Lot, located adjacent to the site. Future development in the area around Site D - the proposed new truck route and other potential road relocations and development - can be coordinated with the development of the memorial site, to the benefit of all the projects. As each of the projects is planned, pedestrian and vehicular access and parking requirements can be integrated into the memorial site plan in a way that enhances the experience of the site.

Availability - Current construction activities on the west side of the Pentagon limit the short-term availability of Site D. Full coordination with the Pentagon's construction program will be necessary to ensure an adequate and appropriate location for the first-anniversary commemorative installation and site dedication ceremony on September 11, 2002. Prior to the first anniversary, construction equipment and structures will need to be relocated away from the southern boundary of the site to allow room for equipment and ceremony-related site preparation. Following the first-year anniversary, the site would continue to be used for the memorial-related work as site preparations and construction work for the final memorial were completed. In the more distant future, careful coordination could dovetail the potential road relocations and other development with the memorial site plans, to the benefit of each of the projects.

Security - Security issues at Site D, as at any location in the area, will vary according to the level of alert at the Pentagon. Security at the proposed memorial will require management, such as maintaining the armed guards that currently patrol the area, or other techniques.

For the reasons outlined above: Site D, located close to the impact area and to the South Parking Lot, is the recommended Pentagon Memorial site.



Pentagon Memorial

Pentagon Memorial Site Evaluation Summary March 2, 2002

Prepared for:

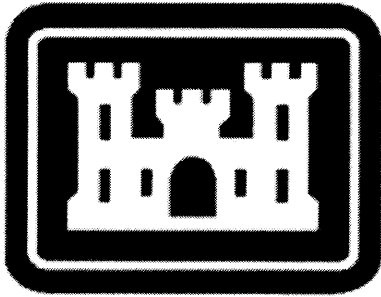
Department of Defense
Washington Headquarters Services
The Pentagon

Prepared by:

US Army Corps of Engineers
Baltimore District



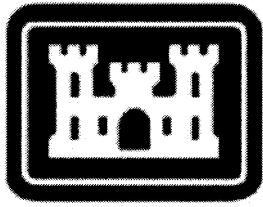
SEA appendix E



**U.S. Army Corps of Engineers
Baltimore District**

Pentagon Memorial Site Evaluation Summary

March 2, 2002



Evaluation Considerations

- ☐ Family acceptability
- ☐ Proximity to the impact area
- ☐ View of the impact area
- ☐ Public accessibility
- ☐ Site availability (as of summer 2002)
- ☐ Security
- ☐ Site size (ideally 1 to 2 acres)
- ☐ Utilities and geotechnical factors
- ☐ Noise and activity level at site
- ☐ Focal point
- ☐ Visual and physical context of the site (good views to and from memorial)

Pentagon Memorial



Site A: Metro Entrance Facility

Site B: River Terrace

Site C: Remote Delivery Facility

Site D: Impact Site

Site E: South Parking Lot

Site F: East Side Of Cloverleaf, between the South Parking Lot and Route 27

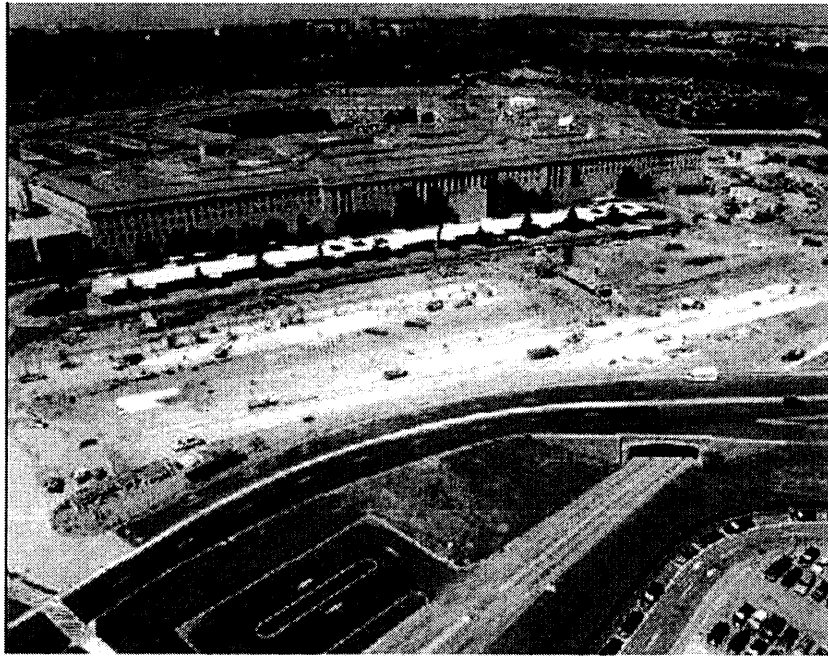
Site G: West Side Of Cloverleaf, between Arlington National Cemetery and Route 27

Site H: Traffic Median, West of Route 27, near the Gas Station

Site I: Navy Annex (FB-2)

Site J: Patton Circle, In The Arlington National Cemetery

Site A Metro Entrance Facility



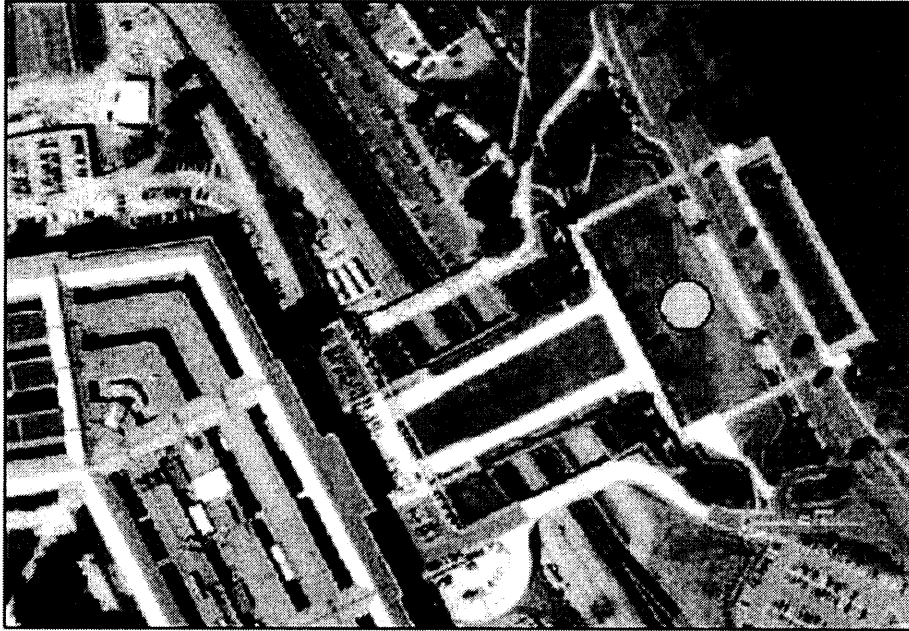
Pros

- Accessible to Metro and Pentagon employees**
- High visibility area**
- Attractive new facility**
- Landscaped area between buses and building**
- High use area = security management in place**

Cons

- No visual connection to the impact site**
- Designed for fast moving pedestrian traffic**
- Only a quick glance at memorial possible as people walk past, it's busy, not tranquil**
- Contemplative space would require new design or traffic pattern**
- Already a 9/11 memorial plaque at the site**
- Difficult to provide parking (closest visitor parking at the Hayes St. Parking Lot)**

Site B River Terrace



Pros

Elegant site

**Several levels with view of the Potomac
and D.C. monuments**

Relatively tranquil, especially near the river

**Area used for formal ceremonial and
informal athletic activities**

Limited visitor parking space along lagoon

Cons

No visual connection to the impact site

**Current uses would conflict with a memorial
in center of space**

Plans to restructure area and relocate

Highway 110 = problem

**Additional parking would reduce amount
of natural riverfront**

Current uses are appropriate for site

Site C Remote Delivery Facility (RDF)



Pros

- Roof garden is attractive**
- Access limited to Pentagon employees**
- Apex is good location for large sculpture or monument (visible to traffic)**

Cons

- No visual connection to the impact site**
- No public access**
- No parking facilities**

Site D Impact Site



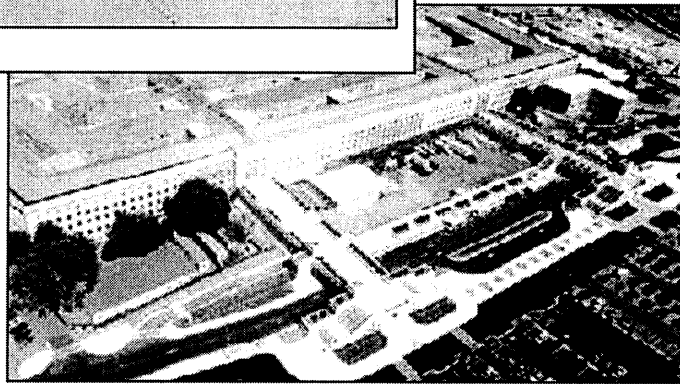
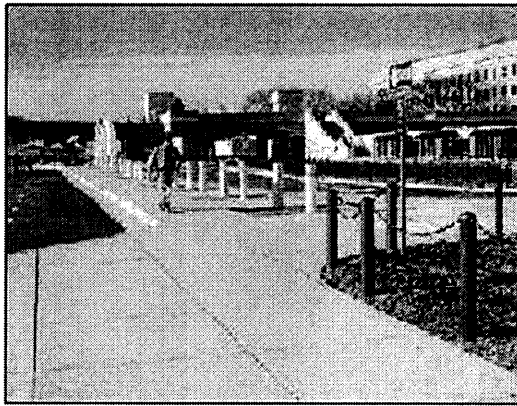
Pros

- Clear view of impact site**
- Close to impact site**
- Close to the South Parking Lot**
- Accessible to Metro Entrance**
- Walking distance from Hayes Street Parking Lot**
- Relatively good vehicle access**
- Usually a large open grassy lawn area**
- Preferred site for Family Steering Committee and Focus Group**

Cons

- Currently used for construction staging**
- Several underground utilities**
- Heliport located at the center of the site (probably to be relocated)**
- Possible future road relocations and other development in area**

Site E South Parking Lot



Pros

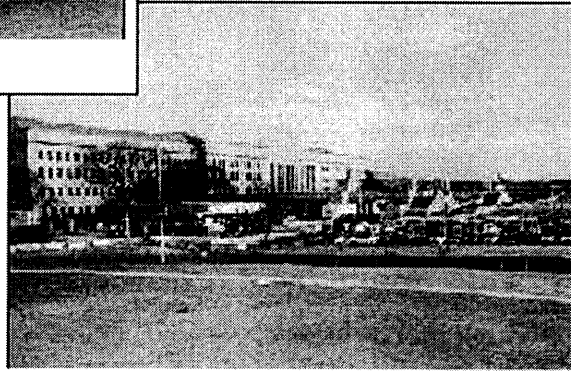
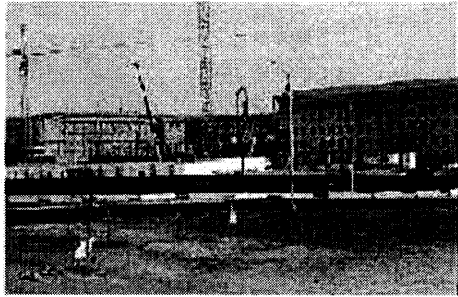
Location close to the Pentagon and impact site
Accessible to pedestrians and vehicles
Memorial at site would fit with stairway entrances
Area currently not used, possibly available for construction

Cons

Lack of visual access to impact site
Visitors would keep walking to see the “real” site
Tentative plans for future development of office buildings in area

Site F East Side of Cloverleaf

Between the South Parking Lot and Route 27



Pros

- Popular unofficial location for viewing impact site**
- Slightly higher elevation of site provides view over construction-area fencing**
- Pedestrian access from the Metro station**
- Cloverleaf roadway around site has less traffic than other parts of intersection**
- Closer to impact site than Site G**

Cons

- Greater distance to impact site than Site D**
- Site owned by Virginia Department of Transportation**
- Safety issues - location in traffic cloverleaf requires pedestrians to cross a road**
- Traffic noise**
- Sloping land = reshape for memorial and visitors**
- Potential plans for road relocations in area**

Site G West Side of Cloverleaf

Between Arlington National Cemetery and Route 27



Pros

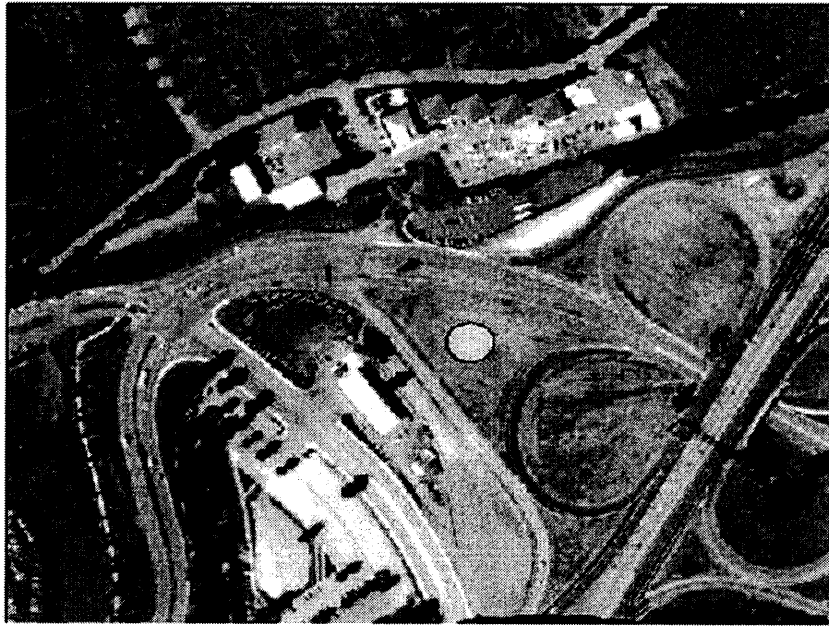
Early unofficial location for viewing impact site
Slightly higher elevation of site provides view over construction-area fencing

Cons

Site owned by Virginia Department of Transportation
Greater distance to impact site than Sites D or F
Safety Issues - location in traffic cloverleaf requires pedestrians to cross a road
Traffic noise

Site H Traffic Median

West of Route 27, Near the Gas Station



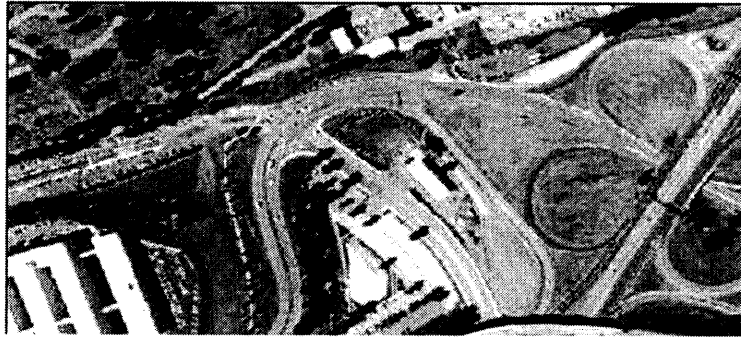
Pros

Excellent view of the Impact site
Formerly used by visitors and the press
Somewhat higher elevation provides views to the impact site

Cons

Site owned by Virginia Department of Transportation
Greater distance to impact site than Sites D,F, and G
Safety issues - location in traffic cloverleaf requires pedestrians to cross a road
Traffic noise

Site 1 Navy Annex (FB-2)



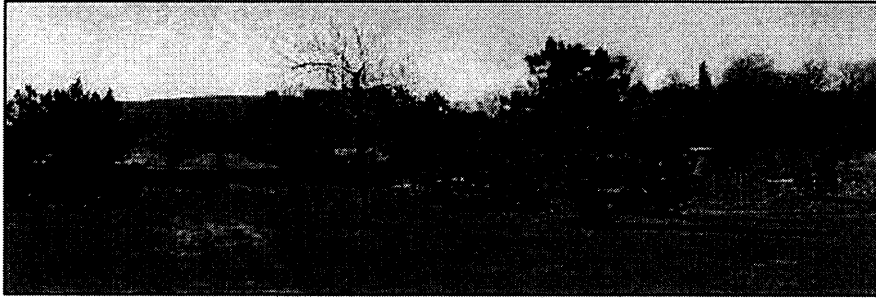
Pros

Site was the closest accessible location to impact site immediately following 9/11
Informal memorials placed at site
Excellent location for a memorial
Adequate space for memorial(s).

Cons

Proposed location for the Air Force Memorial
Law requires memorials to be compatible with proposed Air Force Memorial
Air Force Memorial plans not ready before required completion of 9/11 memorial

Site J Patton Circle In Arlington National Cemetery



Pros

- Tranquil location**
- Close to graves of many victims**
- Distant view of impact area in winter when trees have lost leaves**
- Adequate space on circle and/or the two adjacent triangles for memorial**

Cons

- Visual connection to the impact site only during winter or if trees are removed**
- Location outside the Pentagon reservation**
- Legal prohibition on memorials in Arlington National Cemetery**
- Congressional authorization required for a Pentagon Memorial at the site**
- Circle used daily as organizing area for funeral cortege's**
- Preliminary plans for a group marker near graves**
- Lack of easy access excess for family members (allowed to drive to the site)**
- Other visitors would be required to walk 1/2 mile from the entrance**
- Families do not welcome visitors/strangers "walking on the graves"**



Pentagon Memorial

Regulatory Record

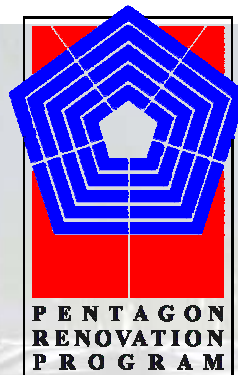
IAW Section 106 of the NHPA of 1966, as amended
Project inception to May 1, 2003

Prepared for:

Department of Defense
Washington Headquarters Services
The Pentagon

Prepared by:

Pentagon Renovation Program
100 Boundary Channel Drive
Arlington, VA 22202-3712



SEA appendix F

DAMUSD
Fax: 1-703-697-1634
Jan 4 '02 16:39
P.03/03

[Title XXVIII—MilCon Gen Provs] H.L.C.

28-49

1 **SEC. 2864. ESTABLISHMENT OF MEMORIAL TO VICTIMS**
2 **OF TERRORIST ATTACK ON PENTAGON RES-**
3 **ERVATION AND AUTHORITY TO ACCEPT**
4 **MONETARY CONTRIBUTIONS FOR MEMO-**
5 **RIAL AND REPAIR OF PENTAGON.**

6 (a) **MEMORIAL AUTHORIZED.**—The Secretary of Defense
7 may establish a memorial at the Pentagon Reservation dedi-
8 cated to the victims of the terrorist attack on the Pentagon
9 that occurred on September 11, 2001. The Secretary shall use
10 necessary amounts in the Pentagon Reservation Maintenance
11 Revolving Fund established by section 2674(e) of title 10,
12 United States Code, including amounts deposited in the Fund
13 under subsection (c), to plan, design, construct, and maintain
14 the memorial.

15 (b) **ACCEPTANCE OF CONTRIBUTIONS.**—The Secretary of
16 Defense may accept monetary contributions made for the pur-
17 pose of assisting in—
18 (1) the establishment of the memorial to the victims
19 of the terrorist attack; and
20 (2) the repair of the damage caused to the Pentagon
21 Reservation by the terrorist attack;

22 (c) **DEPOSIT OF CONTRIBUTIONS.**—The Secretary of De-
23 fense shall deposit contributions accepted under subsection (b)
24 in the Pentagon Reservation Maintenance Revolving Fund. The
25 contributions shall be available for expenditure only for the
26 purposes specified in subsection (b).

27 **SEC. 2865. REPEAL OF LIMITATION ON COST OF REN-**
28 **OVATION OF PENTAGON RESERVATION.**

29 Section 2864 of the Military Construction Authorization
30 Act for Fiscal Year 1997 (division B of Public Law 104-201,
31 110 Stat. 2806) is repealed.

32 **SEC. 2866. DEVELOPMENT OF UNITED STATES ARMY**
33 **HERITAGE AND EDUCATION CENTER AT**
34 **CARLISLE BARRACKS, PENNSYLVANIA.**

35 (a) **AUTHORITY TO ENTER INTO AGREEMENT.**—(1) The
36 Secretary of the Army may enter into an agreement with the
37 Military Heritage Foundation, a nonprofit organization, for the
38 design, construction, and operation of a facility for the United

Public Law 107-107, Section 2864

(National Defense Authorization Act for Fiscal Year 2002)

From: stephanie.sechrist@ncpc.gov
Sent: Wednesday, July 03, 2002 3:36 PM
To: Anderson-Austra, Carol
Subject: RE: letter from virginia historic office
Thanks Carol! Stephanie

-----Original Message-----

From: Anderson-Austra, Carol NAB02 [mailto:Carol.Anderson-Austra@nab02.usace.army.mil]
Sent: Wednesday, July 03, 2002 3:35 PM
To: 'stephanie.sechrist@ncpc.gov'
Subject: letter from virginia historic office

Stephanie - I had Mike Rogers send an electronic copy of the site selection report to Mr. Holma.
C.

3 July 02

Dear Mr. Rogers:

I have received the electronic transmission of the Pentagon Memorial Site Selection Report that you sent yesterday. Please consider this e-mail as the Department of Historic Resources response under Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36 CFR 800.

It is my understanding that the Focus Group responsible for selecting an appropriate location for the proposed Pentagon Memorial commemorating the victims of the September 11, 2001, terrorist attack reviewed a total of ten possible site locations. Of those sites evaluated, the Focus Group recommends Site D-Impact Site as the preferred location.

We determine that the preferred site location will have No Adverse Effect on the Pentagon, a National Historic Landmark. We make this judgment conditionally, however, and it is dependent on your continued consultation with DRY throughout the duration of the project. Please submit to DRY for our review and comment the design of the memorial once selected.

If you have any questions regarding my comments or the Section 106 process please contact me at (804) 367-2323, Ext. 114.

Sincerely,
Marc Holma, Architectural Historian
Office of Review and Compliance

Commonwealth of Virginia SHPO

DHR File #2002-

"No Adverse Effect" determination for the Preferred Site [Site D]



**DEPARTMENT OF DEFENSE
WASHINGTON HEADQUARTERS SERVICES
PENTAGON RENOVATION PROGRAM
100 BOUNDARY CHANNEL DRIVE
ARLINGTON VA 22202-3712**



30 April 2003

Commonwealth of Virginia
Department of Historic Resources
2801 Kensington Ave.
Richmond, VA 23221

Attn: Marc Holma, Architectural Historian
Office of Review and Compliance

Dear Mr. Holma:

Submitted herein, in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800, is the winning Concept Design and "Memorial Gateway" site documentation for the Pentagon Memorial project.

Although the Pentagon Memorial will have no direct impacts to the historical significance factors cited in the National Register Nomination, its relationship and proximity to the site of a recent national tragedy requires coordination. In accordance with 36 CFR 800, we have applied the Criteria of Effect and Adverse Effect (800.5) to this project. After careful consideration of the enclosed documentation, we have determined the design for the Pentagon Memorial and the "Memorial Gateway" site will have No Adverse Effect on the historical significance of the Pentagon Building.

The following outlines the reasons for our No Adverse Effect finding:

- a. The Pentagon Memorial will have no direct impacts to any of the five distinguishing elements of the Pentagon.
- b. The historic envelope of the Pentagon Building will be unchanged as a result of the construction of the Pentagon Memorial.
- c. The alteration of the property will be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR part 68).

The Pentagon Renovation Program, as the design and construction agent for the Department of Defense's Washington Headquarters Services has been given the honor of taking the winning concept design through construction. The outstanding effort by Carol Anderson-Austra and her team at the Army Corps of Engineers has culminated in a design of remarkable emotion and meaning. PENREN is committed to construct this very special Memorial to the highest standards and we are working very closely with the Pentagon Memorial Family Steering Committee to ensure their needs are met every step of the way.



<http://memorial.pentagon.mil/>

Commonwealth of Virginia SHPO
DHR File #2002-
PENREN Request for
"No Adverse Effect" determination for
Memorial Design & Memorial Gateway Site (Page 1)

On July 3, 2002, you determined Site "D," the preferred site location, would have No Adverse Effect on the Pentagon, a National Historic Landmark. This site established the site parameters for the USACE competition for a concept design. This area is now known as the "Memorial Park." The Remote Delivery Facility - Secure Access Lane road construction project [No Adverse Effect designation on October 8, 2002, DHR File #2002-1414] will reconfigure the Columbia Pike/Route 27 cloverleaf and result in a gain of additional area adjacent to the Memorial project site. The reclaimed area adjacent to the Memorial Park is now known as the "Memorial Gateway."

We are currently in the acquisition phase to select a Design-Build team to construct the Memorial. Three highly qualified firms have already been selected to advance to Phase 2 and we expect to award a contract in late June.

We request your concurrence with our findings of No Adverse Effect for the Pentagon Memorial Design and the Memorial Gateway Site. Should you have any questions, or require additional information, please contact me at (703) 693-8954.

Sincerely,



Michael Yopp, AIA
Pentagon Memorial Design Manager
PENREN Historic Preservation Specialist

Enclosures:
Concept Level Submission CD
Supplemental EA
Project Review Application

CC:
Mr. Phil Grone, ODUSD (I&E)
KBAS



<http://memorial.pentagon.mil/>

Commonwealth of Virginia SHPO

DHR File #2002-

PENREN Request for

"No Adverse Effect" determination for

Memorial Design & Memorial Gateway Site (Page 2)

For the **MEMORIAL GATEWAY SITE**,
The Commonwealth of Virginia Department of Historic Resources

_____ CONCURS with the finding of "No Adverse Effect"

_____ DOES NOT CONCUR with the finding of "No Adverse Effect"

Name (Printed)

Signature

For the **PENTAGON MEMORIAL DESIGN**,
The Commonwealth of Virginia Department of Historic Resources

_____ CONCURS with the finding of "No Adverse Effect"

_____ DOES NOT CONCUR with the finding of "No Adverse Effect"

Name (Printed)

Signature



<http://memorial.pentagon.mil/>

Commonwealth of Virginia SHPO

DHR File #2002-

PENREN Request for

"No Adverse Effect" determination for

Memorial Design & Memorial Gateway Site (Page 3)

This application may be completed for all projects that will be federally funded, licensed, or assisted. Allow 30 days from receipt for the review of a project. All information on the form must be completed before review of a project can begin.

DHR Use Only

Date

Received: _____

GENERAL INFORMATION

1. Project Name: Pentagon Memorial
2. Project Location (City or County): Pentagon Reservation, Arlington County
3. Federal Agency (providing funding, assistance, license, or permit):
Department of Defense, Washington Headquarters Service, Pentagon Renovation
4. Agency Contact Person, Address, and Phone: Michael Yopp 703-693-8954
100 Boundary Channel Drive, Arlington, VA 22202
5. Other Federal Agencies involved (include names and addresses of contacts): _____
6. Name and Firm of Applicant: Michael Yopp, Pentagon Renovation Program
7. Address and Phone Number of Applicant: 100 Boundary Channel Drive
Arlington, VA 22202 703-693-8954

DESCRIPTION AND LOCATION

A photocopy of a 7.5 minute USGS topographic quadrangle, or a clearly labeled portion thereof, showing the exact boundaries of the project area must be attached to the application. The map should not be reduced or enlarged.

8. USGS Quadrangle Name: Washington West / Alexandria
9. Number of acres included in the project: Memorial Park (Preferred Site) -1.92 acres
Memorial Gateway - ~1 acre
10. Has this project been previously reviewed by the DHR? Preferred Site Reviewed only
Yes: ☒ No: _____ Do Not Know: _____ (If yes, give the DHR file no., if known)
11. Have any architectural or archaeological surveys of the area been conducted?
Yes: _____ No: ☒ Do Not Know: _____
(If yes, list author, title, date of the report _____)

Commonwealth of Virginia SHPO

DHR File #2002-

PENREN Application for

Project Review (Page 1)

12. Project Description

- A. Explain any ground disturbance that might occur (e.g. excavating for sewer or utility installations, digging footings, grading roads, or developing erosion controls). Describe existing land use within the project area (e.g. plowed, residential, forest, etc.). Mention any previous modifications (e.g. grading, plowing, filling).

Designated "Open Space", ground disturbance required for utility modifications,

footings, and landscaping - all on previously disturbed area.

- B. Are any structures more than 50 years old within or adjacent to the project area?

Yes: ☒ No: ☐ Do Not Know: ☐

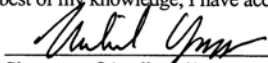
(A photograph of each structure over 50 years of age keyed to the USGS quad within or adjacent to the project area must be submitted.)

- C. Does the project involve the rehabilitation, alteration, removal, or demolition of any structure, building, designed site (e.g. park, cemetery), or district that is 50 years or older?

Yes: ☐ No: ☒ Do Not Know: ☐

(If yes, describe extent of alterations to property. Attach additional page(s) if necessary.)

To the best of my knowledge, I have accurately described the proposed project and its likely impacts.



Signature of Applicant/Agent

April 29, 2003

Date

When completed, send this form and all required attachments to the address below. If you have any questions, please contact the Division of Resource Services and Review at (804) 367-2323, ext.106.

Department of Historic Resources
Division of Resource Services and Review
2801 Kensington Avenue
Richmond, VA 23221

This space for DHR response only:

Comments _____

Signature _____ Date _____

Phone Number _____ DHR File No. _____

Commonwealth of Virginia SHPO

DHR File #2002-

PENREN Application for

Project Review (Page 2)

THE COMMISSION OF FINE ARTS

ESTABLISHED BY CONGRESS 17 MAY 1910

NATIONAL BUILDING MUSEUM
441 F STREET, N.W., SUITE 312
WASHINGTON, D.C. 20001-2728

202-504-2200
202-504-2195 FAX

28 June 2002

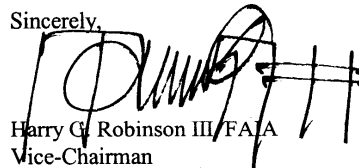
Dear Ms. Anderson-Austra:

During its meeting of 20 June 2002, the Commission reviewed your site selection study for a memorial marking the September 11th attack at the Pentagon. Of several possible sites, the Commission unanimously approved your preferred site just south of the former heliport at the southwest corner of the building. It was felt that siting a memorial at this location (designated "#D" in the report) was appropriate given its visual connection and adjacency to the area of the building that was destroyed by the impact of the hijacked airliner. The members compliment the project team for a thorough evaluation of potential locations and for the comprehensive memorial site selection report.

We appreciated Mr. Robbins' informational presentation on the memorial competition and made two requests in regard to the competition and its accelerated time-line. The first was that we be allowed to examine the text of the competition guidelines before it is released to the public. In previous competitions we have found this to be most helpful in order to avoid potential problems and misdirected efforts that could possibly cause delays. Secondly, we ask that our Assistant Secretary be named an advisor/observer to the competition so that we can monitor and contribute to the process and if an unforeseen problem arises, address it quickly.

The Commission looks forward to a successful result and offers its assistance where and when appropriate. Our staff is available should you have any questions.

Sincerely,



Harry G. Robinson III/FAA
Vice-Chairman

Carol Anderson-Austra, Project Manager
Programs and Project Management Division
U.S. Army Corps of Engineers, Baltimore District
Department of the Army
Baltimore, MD 21203-1715

cc: W. Lee Evey, Pentagon Renovation Program
Mark Robbins
Reed Kroloff

Commission of Fine Arts
Approval of the Preferred Site [Site D]



**DEPARTMENT OF DEFENSE
WASHINGTON HEADQUARTERS SERVICES
PENTAGON RENOVATION PROGRAM
100 BOUNDARY CHANNEL DRIVE
ARLINGTON VA 22202-3712**



30 April 2003

U.S. Commission of Fine Arts
National Building Museum
401 F St., NW, Suite 312
Washington, D.C. 20001-2728

Attn: Charles H. Atherton, Secretary

Dear Mr. Atherton:

Submitted herein, in compliance with Section 5(a) of the National Capital Planning Act of 1952, as amended (40 U.S.C. 71d(a)), is the winning Concept Design and "Memorial Gateway" site documentation for the Pentagon Memorial project. We request to be included on the agenda for the June 19, 2003 Commission Meeting for a Concept level presentation.

The Pentagon Renovation Program, as the design and construction agent for the Department of Defense's Washington Headquarters Services has been given the honor of taking the winning concept design through construction. The outstanding effort by Carol Anderson-Austra and her team at the Army Corps of Engineers has culminated in a design of remarkable emotion and meaning. PENREN is committed to construct this very special Memorial to the highest standards and we are working very closely with the Pentagon Memorial Family Steering Committee to ensure their needs are met every step of the way.

On June 20, 2002, the Commission approved Site "D," establishing the site parameters for the USACE competition for a concept design. This area is now known as the "Memorial Park." The RDF-SAL road construction project [Concept approved by CFA on November 21, 2002] will reconfigure the Columbia Pike cloverleaf and result in a gain of additional area adjacent to the project site. The reclaimed area adjacent to the Memorial Park is now known as the "Memorial Gateway."

We are currently in the acquisition phase to select a Design-Build team to construct the Memorial. Three highly qualified firms have already been selected to advance to Phase 2 and we expect to award a contract in late June.

Prior to the June 19, 2003 Commission Meeting, I would like to set up a meeting to introduce CFA staff to Ms Julie Beckman and Mr. Keith Kaseman and give them an opportunity to share their experiences that led them to the winning design.



<http://memorial.pentagon.mil/>

Commission of Fine Arts

PENREN Request for Concept Approval of
Memorial Design & Memorial Gateway Site (Page 1)

We are honored to serve in such an important role for the Pentagon Memorial project. Our team will forever be emotionally tied to the events of September 11, 2001 and our contribution to the families of the victims is our highest privilege as we all continue to heal. Should you have any questions, or require additional information, please contact me at (703) 693-8954.

Sincerely,



Michael Yopp, AIA
Pentagon Memorial Design Manager
PENREN Historic Preservation Specialist

Enclosures:
Concept Level Submission CD
Supplemental EA

CC:
VA SHPO
KBAS



<http://memorial.pentagon.mil/>

Commission of Fine Arts

PENREN Request for Concept Approval of
Memorial Design & Memorial Gateway Site (Page 2)



401 9th Street, NW
North Lobby, Suite 500
Washington, DC 20576
tel 202 482-7200
fax 202 482-7272
www.ncpc.gov

Commission Members

Appointed by the
President of the United States
John V. Cogbill, III, Chairman
Richard L. Friedman
Robert A. Gaines

Appointed by the Mayor of
the District of Columbia
Arrington Dixon
Dr. Patricia Elwood

Secretary of Defense
The Honorable Donald H. Rumsfeld

Secretary of the Interior
The Honorable Gale A. Norton

Administrator of General Services
The Honorable Stephen A. Perry

Chairman, Committee on
Governmental Affairs
United States Senate
The Honorable Joseph I. Lieberman

Chairman, Committee on
Government Reform
U.S. House of Representatives
The Honorable Dan Burton

Mayor, District of Columbia
The Honorable Anthony A. Williams

Chairman, Council of the
District of Columbia
The Honorable Linda W. Cropp

Executive Director
Patricia E. Gallagher, AICP

IN REPLY REFER TO:
NCPC File No. 6267

JUL 22 2002

Ms. Carol Anderson-Austra
Project Manager
U.S. Army Corps of Engineers
Department of the Army
P.O. Box 1715
Baltimore, Maryland 21203-1715

Dear Ms. Anderson-Austra:

In response to your request, the National Capital Planning Commission, at its meeting on July 11, 2002, approved the enclosed report to the U.S. Army Corps of Engineers on the location of a Memorial to Victims of September 11, 2001, who died as a result of the terrorist attack at the Pentagon.

Sincerely,


Patricia E. Gallagher, AICP
Executive Director

Enclosure

NATIONAL CAPITAL PLANNING COMMISSION

bc: Robert E. Brosnan
Director of Planning
Arlington County

National Capital Planning Commission
NCPC File #6267
Approval of the Preferred Site [Site D] (Page 2)

STAFF DRAFT

S. Sechrist

Mail Date 7/5/02

NCPC File No. 6267



MEMORIAL TO THE VICTIMS OF SEPTEMBER 11, 2001

Pentagon Reservation
Arlington County, Virginia

Report to the U.S. Army Corps of Engineers

July 11, 2002

Abstract

The U.S. Army Corps of Engineers has submitted a preferred location on the Pentagon Reservation for the Memorial to Victims of September 11th. On September 11, 2001, American Airlines Flight 77 was hijacked by terrorists and crashed into the Pentagon, killing 59 passengers and crewmembers aboard the aircraft and 125 military and service personnel in the Pentagon, and causing many injuries. The west façade of the building sustained major damage at the area of impact. Section 2864 of Public Law 107-107, the National Defense Authorization Act for fiscal year 2002, gave the Secretary of Defense the authority to establish a memorial on the grounds of the Pentagon to memorialize those innocent victims who lost their lives on September 11, 2001 at the Pentagon. The Corps conducted an analysis of ten potential memorial sites within close proximity to the Pentagon. The preferred site, Site D, is closest to the impact site, with unobstructed views to the west façade of the Pentagon.

The Corps has recently announced an open, two-stage design competition to select an artistic concept for the memorial. The first stage of the competition will be free and open to design professionals, as well as non-professionals. The competition jury will select five of the Stage One submissions to be developed in greater detail during Stage Two. The competition criteria are intended to be relatively broad to encourage artistic creativity. As the memorial design competition progresses, the Corps is encouraged to consider the height and mass of the future memorial so that it does not obstruct the west façade of the Pentagon, a National Historic Landmark.

Authority

Approval of site selection pursuant to Section 5 of the National Capital Planning Act of 1952, as amended (40 U.S.C. 71d).

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Executive Director's Recommendation

The Commission:

- **Approves** Site "D," as shown in the "Pentagon Memorial Site Selection Report" dated January 30, 2002, for the location of a Memorial to Victims of September 11th memorializing those who died as a result of the terrorist attack at the Pentagon, as shown on NCPC Map File No. 2105(73.10)41051
- **Recommends** that the Corps, in the preparation of the memorial design criteria and throughout the memorial competition process, consider the height and mass of the future memorial so that it preserves the visual integrity of the Pentagon and does not obstruct the west façade of the building where the terrorist attack occurred.

* * *

BACKGROUND AND STAFF EVALUATION***DESCRIPTION OF PROPOSAL***

On September 11, 2001, American Airlines Flight 77 was hijacked and flown into the Pentagon in Arlington County, Virginia. The hijacked airline was one of four across the country that day, in what became the worst terrorist event on American soil. Shortly after the terrorist attacks, Congress passed Public Law 107-107, the National Defense Authorization Act for Fiscal Year 2002; Section 2864 gave the Secretary of Defense the authority to establish a memorial on the grounds of the Pentagon to memorialize the victims of the terrorist attack on the Pentagon. The Commission is reviewing the site selection for the Memorial to Victim's of September 11th pursuant to Section 5 of the National Capital Planning Act of 1952. The memorial will be constructed on the grounds of the Pentagon Reservation and is not subject to the Commemorative Works Act of 1986.

The U.S. Army Corps of Engineers, Baltimore District, initiated the Pentagon memorial project in October of 2001. Within a month, a Focus Group and Family Steering Committee had been formed. The Focus Group is made up of representatives from the military services and the Pentagon offices, Arlington National Cemetery, approval agencies (NCPC and CFA) and a professional advisor. The Family Steering Committee includes approximately a dozen representatives of the victims' families and is significantly involved in the memorial project. Throughout the fall of 2001 and into 2002, the Pentagon memorial group identified potential memorial sites and evaluated them according to a number of site location criteria. The preferred location of the Focus Group and the Family Steering Committee quickly became Site D, the site closest to the impact site. The Secretary of Defense has also authorized that the memorial be constructed at the preferred site location.

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Memorial Site Location Criteria

The "Pentagon Memorial Site Selection Report" of January 20, 2002, examined ten potential sites located on the Pentagon reservation or within close proximity. Each of these potential sites was evaluated in the context of the following criteria:

Family Acceptability

- The site should be acceptable to family members of victims killed in the terrorist attack on the Pentagon.

Proximity to the Impact Site

- The site should be located physically as close as possible to the impact site.

View of the Impact Site

- The site should provide for views of the impact site.

Public Accessibility

- The site must be accessible to visitors arriving on foot, by Metro, car, bus or bicycle. It must also be handicapped accessible and be within proximity to parking facilities.

Site Availability

- The site must be authorized for a memorial, and a portion of the site must be available for site preparation and construction beginning in the summer of 2002.

Security

- The site must be capable of being secured, if and when appropriate.

Site Size

- The memorial should not overwhelm the site and should accommodate associated landscaping, as well as provide space for gatherings and ceremonies. The site should be at least 1-2 acres.

Utilities and Geotechnical Factors

- Underground utilities, soil stability, and other physical factors of the site should be accommodated in the development of the memorial.

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Noise and Activity Level at the Site

- The site should provide for a feeling of peace and tranquility.

Focal Point

- The site should have physical characteristics suitable for the creation of a memorial that is the focal point of the space.

Visual and Physical Context of the Site

- The site should be compatible with surrounding development, either existing or proposed. The site should provide a positive visual experience from a distance and on approach, both by pedestrians and from vehicles, and should allow for screening of undesirable views.

Potential Memorial Site Locations

The following sites were identified as potential Pentagon memorial site locations:

Site A – Metro Entrance Facility (MEF)

The new MEF on the southeast side of Pentagon replaces the previous location of the bus terminal and Metro access, which had a direct connection to the Pentagon and was deemed to be unsecure. The MEF was constructed to remove the direct access from Metro to the building, and to increase the distance between the buses and the buildings. The project includes a new entrance facility/visitors center, as well as landscaped berms around the new Metro escalators and between the building and the bus terminals. The Commission approved the MEF on March 1, 2001.

Site B – River Terrace

The River Terrace is a designed landscape feature of the Pentagon reservation facing the Potomac River, with views of some of Washington's major monuments. It is the most remote frontage of the Pentagon, where formal ceremonies and informal athletic activities occur.

Site C – Remote Delivery Facility (RDF)

The RDF is located in front of the north façade of the Pentagon. The RDF was constructed to provide improved physical security and a consolidated location for receiving and screening the thousands of items shipped to the Pentagon daily. The Commission approved the RDF on October 7, 1999. It is a natural extension of the main Pentagon Building, with an aboveground, landscaped promenade used as an urban park for Pentagon employees.

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Site D – Impact Area

Site D is located on the west side of the Pentagon, close to the south parking lot in an area that is currently used for construction staging for the renovation of the Pentagon and for the replacement of the area destroyed during the terrorist attack. Prior to its use as a construction staging area, this side of the Pentagon was the largest open space area, with the heliport located approximately in the center of the space.

Site E – South Parking Lot

This site is located in the portion of the south parking lot closest to the Pentagon. The site area is currently barricaded due to security reasons.

Site F – Traffic cloverleaf on the east site of Route 27

This traffic circle is located between the south parking lot and Route 27 and has become the unofficial location for a clear view of the impact site. The cloverleaf is elevated, allowing for views over the construction fencing.

Site G – Traffic cloverleaf on the west side of Route 27

This cloverleaf is located across Route 27 to the west and is closest to the Arlington National Cemetery. The property is owned by the Virginia Department of Transportation. Like Site F, this site is also elevated and allows for views of the impact site.

Site H – Traffic median on west side of Route 27

Site H is located west of the cloverleaf, on the traffic median in front of the gas station. This is the location that was used by visitors and the press following the terrorist attack.

Site I – Navy Annex

The Navy Annex memorial site is located on the hill sloping down toward the road in front of Federal Building 2 (FB -2). This was the site where many visitors went after the attack and placed informal memorials. This is also the site of the proposed Air Force Memorial.

Site J – Patton Circle

Patton Circle is located in Arlington National Cemetery, where it is used for organizing funeral corteges several times a day. The impact site is visible from Patton Circle during the fall and winter months when the leaves are off the trees.

Preferred Site Description

The irregular, pie-shaped memorial site (Site D) encompasses approximately 2 acres and is located roughly 165 feet from the face of the Pentagon. The site is currently used as a

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construction staging area. After the construction equipment is removed, the site will be regraded to slope gently downward from west to east in a bowl-like pattern. The site is adjacent to the access road onto Route 27 northbound. The Pentagon Renovation Office is in the early phases of designing a new access and service road paralleling Route 27 that would remove the two cloverleafs east of Route 27 and reconfigure access to the remote delivery facility. The new road configuration could result in additional area adjacent to the memorial site.

Memorial Design Competition

The U.S. Army Corps of Engineers has recently announced an international design competition for a Memorial to Victims of September 11, 2001, at the preferred location on the Pentagon reservation. The Corps has stressed that the major theme of the memorial should be a "dignified and moving testament to the sacrifice" of those killed in the Pentagon terrorist attack.

The open competition will take place in two stages. The tentative competition schedule is listed below:

September 11, 2002 – Stage One submission deadline.
September 30 to October 2, 2002 – Jury reviews Stage One submissions.
October 10, 2002 – Stage One finalists notified.
December 11, 2002 – Stage Two submission deadline.
December 13, 2002 – Jury reviews Stage Two submissions.
December 20, 2002 – Selected design winner notified.

Stage One will be free and open to the public. The jury, made up of professionals, government representatives and a victim's family member, will select five of the Stage One designs to go forward to the next stage. The five finalists will receive a stipend to complete more detailed design drawings. The competition criteria have not yet been finalized; however, the Corps intends for the memorial criteria to be broad, with no specific requirements governing the size, form or material of the memorial. The criteria will outline certain features that should not be included in the memorial program, including: fully enclosed rooms, internal elevators, escalators, or ancillary memorial functions such as a museum, interpretive center, theatre, or restrooms. There are also necessary security features that must be considered as the memorial is designed, including a secure buffer between the memorial site and the Pentagon, and between the memorial and the helipad to the north (although it may, in the future, be removed).

EVALUATION

Shortly after the tragic events of September 11, 2001 it became clear that a memorial to the victims of the terrorist attack at the Pentagon was crucial. The Corps quickly initiated the Pentagon memorial project and the process of establishing the memorial – the site selection is the first step in that process.

The Corps "Pentagon Memorial Site Selection Report" identifies ten potential memorial sites and evaluates them within the context of locational criteria. All of the sites have both negative and positive characteristics. Sites with serious obstacles were quickly dismissed, and the desires of

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the family members were carefully considered. Several of the sites have limited potential for a memorial, and ultimately Site D became a clear choice.

Some of the sites, including Site A, the Metro entrance facility, and Site B, River Terrace, did not provide views to the impact site. Site A, although ideally located adjacent to Metro, was not selected because of excessive pedestrian and bus activity that would likely take away from the desired serenity at the memorial. In addition, there was limited visitor parking within close proximity to Site A. The River Terrace (Site B), while a serene setting, provides some challenges. The ceremonies that take place at the River Terrace use the central panels and, as a result, would make the memorial secondary to the site's main uses. In addition, the memorial would be inaccessible during ceremonies at the River Terrace. Other issues related to Site B are its remoteness from the impact site and the likelihood that it will be affected by the future realignment of Route 110.

Site C, the remote delivery facility (RDF), has a rooftop plaza that would be an excellent urban space that could easily accommodate a memorial. However, this site has one major downfall in that it is a secure site not open to the public. Given the purpose of the RDF, the memorial site could never be publicly accessible because it would compromise the integrity of the secure facility.

Site D is the preferred location, largely because of its proximity to the impact site. The site quickly became a preferred location, especially by family members, one of whom stated, "the site was selected on September 11th." The site also provides excellent, unobstructed views to the impact site. There are other practical benefits to this site – the site is located within close proximity to parking, and is within walking distance from the Pentagon Metro station.

Site E, the south parking lot, had some advantages, but it lacks the essential visual access to the impact site. It was also felt that visitors would likely bypass the memorial and continue on to view the actual impact site. Furthermore, the Pentagon has indicated consideration of more development in this area.

The traffic medians and cloverleaves, Sites F, G, and H, provide a host of challenges. First, the Virginia Department of Transportation (VDOT) owns some of the land. Second, the access to Route 27 is likely to change in the future, at least the portion on the Pentagon Reservation, to accommodate safer access to the RDF. Third, traffic noise and congestion is not generally compatible with a memorial of this type. Finally, safety and the lack of parking are other negatives associated with these sites.

Site I, the Navy Annex, does provide good visual access to the impact site, however it is a partially secured site, making public access difficult. Furthermore, the National Defense Authorization Act for Fiscal Year 2002, which also gave the Secretary of Defense the authority to establish a memorial to victims of September 11th, authorized this site for the future Air Force Memorial.

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Finally, Site J, Patton Circle in Arlington National Cemetery, was not chosen as the future memorial site due to a number of variables. First, the property is not located on the Pentagon Reservation, requiring congressional action to permit the memorial to be built there. Second, the site is used several times a day in preparation for funerals, limiting the availability of the site for a memorial use. Third, although family members initially preferred the site, it was ultimately discouraged because visitors could not drive to the site, but would have to walk approximately ½ mile to reach the site. A group marker for the September 11th victims will also be located near this site, making the memorial potentially redundant.

Staff concurs with the preferred memorial site recommended by the Army Corps of Engineers in consultation with the project team – the Focus Group and Family Steering Committee – and the Secretary of Defense. Site D is the closest to the impact site, provides unobstructed visual links to the area where 184 innocent victims were killed, and provides adequate room for such practical considerations such as parking and pedestrian access. Perhaps most importantly, the family members of the victims who lost their lives at the Pentagon on September 11, 2001, and “paid the ultimate price,” prefer the site.

The memorial competition criteria are in the process are being drafted by the Corps and will be available to the public within a short time. The Corps intends for the memorial competition process to be open, and hopes to receive entries from a wide variety of participants, from untrained individuals to experienced design professionals. The draft competition criteria are broad to encourage the highest degree of artistic creativity as possible. Staff has reviewed the draft criteria and finds them generally acceptable. As the guidelines are developed, and as the competition progresses, staff encourages the Corps to consider the height and mass of the future memorial and its visual impact on the Pentagon, a National Historic Landmark. The Corps should ensure that the future memorial will not obstruct the west façade of the Pentagon where the terrorist attack took place, either from within the site or from nearby sites such as Arlington National Cemetery, the Navy Annex, or Route 27. The Pentagon should remain the dominant element of the landscape.

COORDINATION

Commission of Fine Arts

The Commission of Fine Arts approved the memorial site location at its meeting on June 20, 2002.

CONFORMANCE

National Historic Preservation Act

The Pentagon is a National Historic Landmark listed in the National Register of Historic Places for its continuing nationally significant role as the headquarters of the Department of Defense since World War II. The Army Corps of Engineers has consulted with the Virginia State Historic Preservation Office (VA SHPO) throughout the site selection phase, and will continue to consult

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with the VA SHPO as the memorial design progresses. The VA SHPO has indicated that the memorial likely *would not adversely affect* the architectural and historic qualities of the building and its setting that qualify the Pentagon for listing in the National Register.

National Environmental Policy Act

Pursuant to the regulations implementing the National Environmental Policy Act (NEPA), the responsible officials of the Pentagon have reviewed the project site selection and location in accordance with the provisions of the National Environmental Policy Act (NEPA).

The project is categorically excluded pursuant to Department of the Army Regulation, AR 200-2, Appendix A, when no extraordinary circumstances exist.

Comprehensive Plan

The Pentagon is a national landmark and is designated for national defense facilities in the Federal Facilities Element of the Comprehensive Plan. As the proposed memorial site is located outside the Monumental Core, the Comprehensive Plan contains no specific policies that would apply to the placement of a memorial at this location. For this reason, it is simply determined that the proposed site is not inconsistent with the Comprehensive Plan. However, the site location is unquestionably consistent with the general intent of Comprehensive Plan policies for the placement of memorials at fitting locations that commemorate great events or national tragedies.

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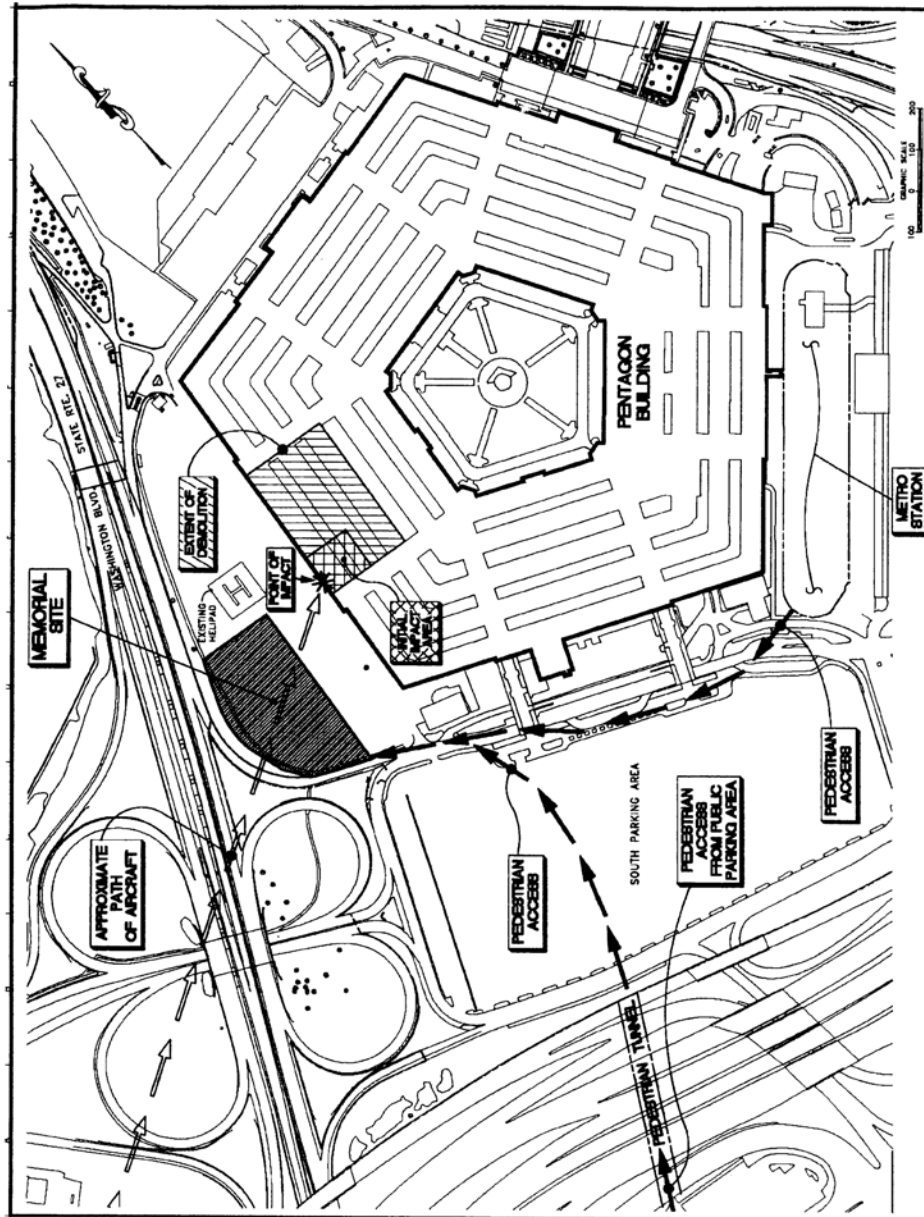


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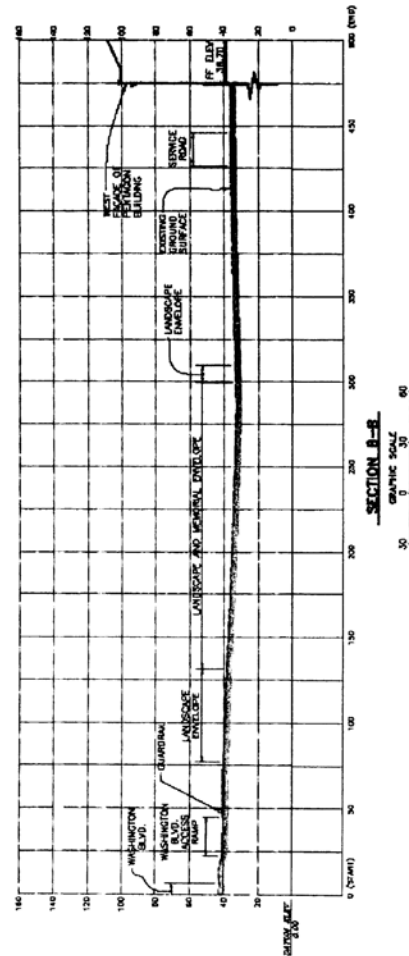
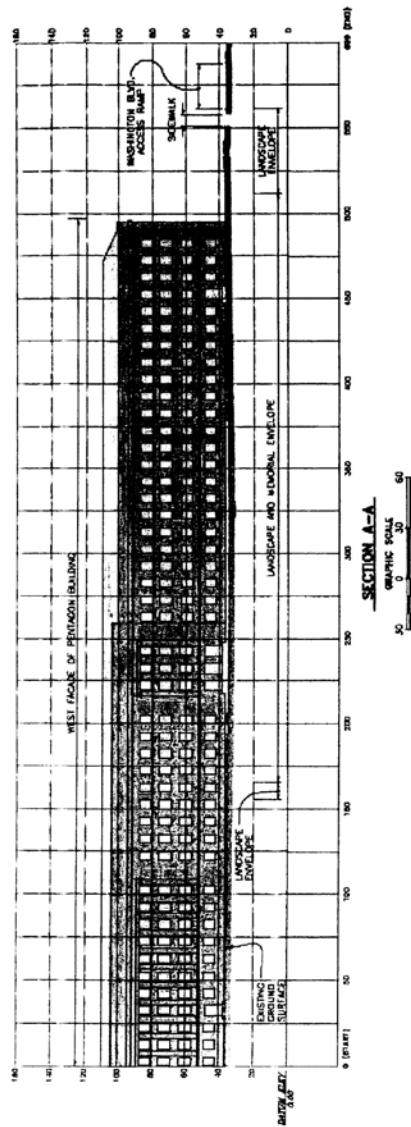
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**DEPARTMENT OF DEFENSE
WASHINGTON HEADQUARTERS SERVICES
PENTAGON RENOVATION PROGRAM
100 BOUNDARY CHANNEL DRIVE
ARLINGTON VA 22202-3712**



30 April 2003

National Capital Planning Commission
401 9th St., NW, Suite 500
Washington, D.C. 20576

Attn: Hillary Altman, Director
Office of Urban Design and Plan Review

Dear Ms Altman:

Submitted herein, in compliance with Section 5(a) of the National Capital Planning Act of 1952, as amended (40 U.S.C. 71d(a)), is the winning Concept Design and "Memorial Gateway" site documentation for the Pentagon Memorial project. We request to be included on the agenda for the June 5, 2003 Commission Meeting for a Concept level presentation by your staff.

The Pentagon Renovation Program, as the design and construction agent for the Department of Defense's Washington Headquarters Services has been given the honor of taking the winning concept design through construction. The outstanding effort by Carol Anderson-Austra and her team at the Army Corps of Engineers has culminated in a design of remarkable emotion and meaning. PENREN is committed to construct this very special Memorial to the highest standards and we are working very closely with the Pentagon Memorial Family Steering Committee to ensure their needs are met every step of the way.

On July 11, 2002, the Commission approved Site "D," establishing the site parameters for the USACE competition for a concept design. This area is now known as the "Memorial Park." As noted in July 11, 2002 report [NCPC File No. 6267], the RDF-SAL road construction project will reconfigure the Columbia Pike cloverleaf and result in a gain of additional area adjacent to the project site. The reclaimed area adjacent to the Memorial Park is now known as the "Memorial Gateway".

We are currently in the acquisition phase to select a Design-Build team to construct the Memorial. Three highly qualified firms have already been selected to advance to Phase 2 and we expect to award a contract in late June.

Prior to the June 5, 2003 Commission Meeting, I would like to set up a meeting to introduce NCPC staff to Ms Julie Beckman and Mr. Keith Kaseman and give them an opportunity to share their experiences that led them to the winning design.



<http://memorial.pentagon.mil/>

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PENREN Request for Concept Approval of
Memorial Design & Memorial Gateway Site (Page 1)

We are honored to serve in such an important role for the Pentagon Memorial project. Our team will forever be emotionally tied to the events of September 11, 2001 and our contribution to the families of the victims is our highest privilege as we all continue to heal. Should you have any questions, or require additional information, please contact me at (703) 693-8954.

Sincerely,



Michael Yopp, AIA
Pentagon Memorial Design Manager
PENREN Historic Preservation Specialist

Enclosures:
Concept Level Submission CD
Supplemental EA

CC:
VA SHPO
KBAS



<http://memorial.pentagon.mil/>

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**PENREN Request for Concept Approval of
Memorial Design & Memorial Gateway Site (Page 2)**



Pentagon Memorial

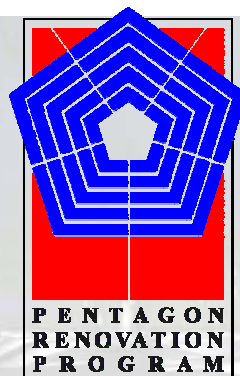
References

Prepared for:

Department of Defense
Washington Headquarters Services
The Pentagon

Prepared by:

Pentagon Renovation Program
100 Boundary Channel Drive
Arlington, VA 22202-3712



SEA appendix G

REFERENCES

“Pentagon Reservation Master Plan Final Report.” Prepared for the US Army Corps of Engineers, Baltimore District. Prepared by DMJM-3D/I. May 28, 1991.

“Final Environmental Assessment of the Pentagon Reservation Master Plan.” Prepared for the Department of Defense Washington Headquarters Service. Prepared by DMJM-3D/I. May 28, 1991.

Stage One Competition Program – *“Call for Entries, Memorial to Honor the Victims of the Attack on the Pentagon.”* Issued by US Army Corps of Engineers, Baltimore District, July 2002.



Pentagon Memorial

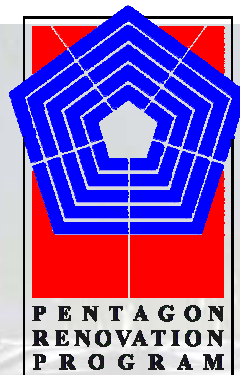
Design Criteria Design Program

Prepared for:

Department of Defense
Washington Headquarters Services
The Pentagon

Prepared by:

Pentagon Renovation Program
100 Boundary Channel Drive
Arlington, VA 22202-3712



SEA appendix H

1.0 INTRODUCTION

1.1 Background

On September 11, 2001, American Airlines Flight 77 took off from Washington Dulles International Airport with 64 people aboard, bound for Los Angeles. In flight, five terrorists hijacked the plane and crashed it into the west face of the Pentagon. The crash resulted in the death of the 59 passengers and crewmembers aboard the aircraft, as well as 125 military service members and civilians within the Pentagon. Many others suffered injuries.

The FY 2002 Defense Authorization Act, Section 2864 provides authorization for the Memorial. “The Secretary of Defense may establish a memorial at the Pentagon Reservation dedicated to the victims of the terrorist attack on the Pentagon that occurred on September 11, 2001.”

1.1.1 Design Competition

On December 27, 2001, the Director of WHS signed a Support Agreement (SA) which engaged the United States Army Corps of Engineers (USACE) to provide for planning, site selection, design and related technical services leading to the completion of the design competition for the Pentagon Memorial (Memorial).

A two-stage competition for a memorial Concept Design was planned and executed by USACE. Over 1,100 designs from around the world were submitted in Stage One. The Pentagon Memorial Competition jury met in Washington, DC from September 30 to October 2, 2002 to select six finalists to advance to Stage Two. The Pentagon Memorial Competition jury met again on February 21, 2003 to choose the final Concept Design from among the six finalists. The winning Concept Design by Keith Kaseman and Julie Beckman (KBAS) was announced at the Pentagon on March 3, 2003.

1.1.2 Design Lock

To preserve the integrity of the design composition and formally validate the Competition process and Jury decision, the Pentagon Memorial Family Steering Committee (FSC) has placed a “lock” on the Concept Design. Changes involving the aesthetic characteristics, layout / orientation, and/or form of the design elements will not be accepted nor considered.

The Design Lock will still allow for modifications that may be required for constructability or code compliance.

1.2 Project Overview

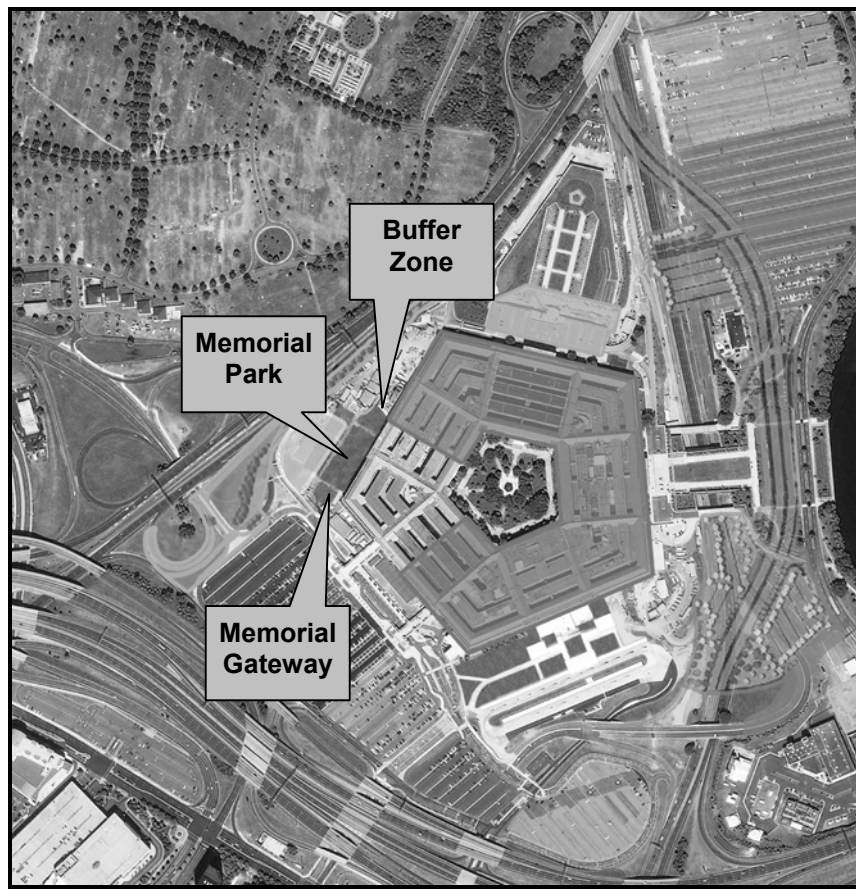
This acquisition is for the design-build of the Pentagon Memorial to develop the winning Concept Design in partnership with KBAS and construct a Memorial to the victims of the September 11, 2001 attack on the Pentagon. Attention to detail, durability and maintainability are of paramount importance.

1.3 Project Site

The location of the Project Site is within the Pentagon Reservation. Activities associated with the Project will take place on two (2) distinct, but adjacent areas- the Memorial Park and the Memorial Gateway. A Buffer Zone comprised of a thirty foot-wide strip of land at the northern boundary of the Memorial Park has been established to keep an area free of any obstruction or construction-related activity associated with the ongoing renovation of the Pentagon.

1.3.1 Memorial Park

- Established the site parameters for the USACE competition for a concept design;
- Is located 165 feet west of the Pentagon Building in an area bounded by the RDF Secure Access Lane (under construction), the South Parking Lot, and an open area (formerly a heliport, currently utilized as construction staging for the renovation of Wedges 2-5);
- Is within clear view of the point at which flight 77 struck the building (the flight path crosses directly over the site along an easterly vector);
- Is currently being utilized for construction staging and contractor support for the Wedge 1 reconstruction / Phoenix Project; and
- Consists of approximately 1.93 acres. (Site is indicated in photograph)



The Pentagon Reservation

1.3.2 Memorial Gateway

- Is located directly adjacent to the Memorial Park's southwest boundary;

- Will require coordination with other PENREN construction projects;
- May be the location for Project staging and contractor support activities;
- May be the location for an underground vault serving as an Equipment Control Center (ECC) for the Memorial Unit pool water circulation system; and
- May include an interpretive board, donor plaque, entry sign, benches, and drinking fountains as visitor amenities.

1.4 Project Objectives

The Key Objectives for a successful Project are:

- Ability to execute a Project to the satisfaction of all family members represented by this Memorial and the DoD community as a whole.
- Ability to execute a product utilizing construction and design detailing of the highest quality without compromising the winning Concept Design.
- Ability to perform within the scheduled timeframe while meeting all interim milestones.
- Ability to accommodate safety and security requirements while integrating the interests, programmatic and functional requirements of other project teams and government contractors.

1.5 Government Entities

1.5.1 Washington Headquarters Services (WHS)

Washington Headquarters Services (WHS) was established under Title 10, United States Code, on October 1, 1977 as a Department of Defense (DoD) Field Activity to provide operational support to specified DoD activities in the National Capital Region (NCR). In this role, WHS assumes the responsibility for planning and management of DoD-occupied space in the NCR, including the Pentagon. The Secretary of Defense has delegated authority for exercising jurisdiction, custody, operation and control of the Pentagon Reservation to the Director of WHS.

1.5.2 The Pentagon Renovation Program (PENREN)

The Pentagon Renovation Program (PENREN) of WHS, hereinafter referred to as “the Government,” is the Owner’s representative and contracting agency for this project.

1.5.3 Real Estate and Facilities Directorate (RE&F)

The Real Estate and Facilities Directorate (RE&F) of WHS through its Federal Facilities Division (FFD) operates and maintains the facilities on Pentagon Reservation grounds. RE&F has overall responsibility for this Project.

1.5.4 Pentagon Force Protection Agency (PFPA)

The Pentagon Force Protection Agency (PFPA) is the force protection arm of the Pentagon and is responsible for all security aspects related to the design, construction, and operation of the Pentagon. PFPA personnel screen and control all pedestrian and vehicular access into the Pentagon and within the Pentagon Reservation.

1.6 Acronyms and Abbreviations

Following is a partial list of acronyms and abbreviations used throughout this document. Note that drawings have their own legends.

ADA	Americans with Disabilities Act
AIA	American Institute of Architects
CAD	Computer Aided Drawing
CD	Construction Document
CFA	Commission of Fine Arts
CL+	Concept Level Plus
CNC	Computer Numerically Controlled
CO	Contracting Officer
Contractor	Design Build Contractor
COR	Contracting Officers Representative
CPM	Critical Path Method
CQC	Contractor quality control
CS	Commissioning Specialist
CSI	Construction Specifications Institute
Cx	Commissioning
DB	Design-Build
DCx	Decommissioning
DGN	File format for Bentley Microstation drawing
DID	Design intent document
DoD	Department of Defense
DPS	Defense Protective Service
DWG	File format for Autodesk AutoCad drawing
ECC	Equipment Control Center
EO	Executive Order
EPP	Environmentally Preferred Products
EV	Earned value
FAA	Federal Aviation Administration
FFD	Federal Facilities Division
FIM	Facility Information Management
FSC	Family Steering Committee (of the Pentagon Memorial)
GUI	Graphical User Interface
HVAC	Heating, Ventilation and Air Conditioning
IEQ	Indoor Environmental Quality
KBAS	Kaseman Beckman Amsterdam Studio
NCPC	National Capital Planning Commission
NCR	National Capital Region
NEPA	National Environmental Protection Act
NHPA	National Historic Preservation Act
NTP	Notice to Proceed
O&M	Operations and maintenance
OGC	Other Government Contractor
P3	Primavera Project Planner
PA	Public Affairs (of PENREN)
PBMO	Pentagon Building Management Office
PDE	Primary Design Element
PDF	File format for Adobe Portable Document Format
PDI	Project Design Intent
PDM	Precedence Diagram Method
PDP	Project Design Program
PENREN	Pentagon Renovation Program
PFPA	Pentagon Force Protection Agency
PRPEDS	Pentagon Renovation Program Electronic Data Standards

PVC	Polyvinyl Chloride
QA	Quality assurance
QC	Quality control
RDF	Remote Delivery Facility
R&D	Research and Development
RE&F	Real Estate and Facilities Directorate
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Qualifications
SAL	Secure Access Lane (of the Remote Delivery Facility)
SHPO	State Historic Preservation Officer
UFAS	Uniform Federal Accessibility Standards
USACE	United States Army Corps of Engineers
VA	Virginia (Commonwealth of)
VOC	Volatile Organic Compounds
WHS	Washington Headquarters Services

2.0 PROJECT REQUIREMENTS

2.1 Professional Design-Build Services

The Contractor shall provide all services for the design and construction of the Project, including, but not limited to; management, design development of the Project Design Intent (PDI), administration, and construction necessary for completion of the project. The Contractor is responsible for the professional quality, code compliance, technical accuracy, and coordination of all designs, drawings, specifications and other documents or publications upon which the design and construction are based. The Contractor is responsible for the coordination of all design disciplines, trades, manufacturers, suppliers, consultants, etc., for all elements and systems. Additionally, coordination with Other Government Contractors (OGC) may also be required where their work could directly or indirectly impact this Project (e.g. installation of security devices, controls, and telecommunications infrastructure). The Project must be designed and constructed with the understanding and respect that the Memorial will be a permanent, dignified and moving testament to the sacrifice of both those killed in the Pentagon, and those who died aboard American Airlines Flight 77 as it was crashed into the building.

2.1.1 Concept Designers

An international design competition has established a pre-selected concept design for the Project. In order to successfully meet the Project Objectives established for the Pentagon Memorial, the Concept Designers (KBAS) shall be an integral part of the Contractor's team with full involvement throughout all phases of the Project providing insight, research and problem-solving skills critical in developing strategies for fabrication, documentation, coordination and implementation of all facets of the design. PENREN seeks an environment of teamwork and collaboration where the Architect of Record, the Contractor construction manager, and KBAS work together, to lead the team and establish the high standards expected by all. Working within, and coordinated with the overall Project team, KBAS shall provide services in support of the design and construction of the Project.

2.1.2 Architect of Record

The Contractor shall designate a registered Architect as the Architect of Record who will be responsible for the integration and approval of the complete design and construction documents package. The Architect of Record must sign and seal all construction documents for each phase of work. The Architect of Record shall designate representatives with sign-off authority for individual disciplines required for the completion of the design. Those individuals must be registered architects and engineers and have significant influence over the development of the design. Sign-off from the Architect of Record and designated representatives shall be on all applicable construction documents, specifications, material and mock-up submittals, and shop drawings before construction can begin.

2.1.3 Design Review

The Design Review process is the critical step to ensuring compliance with the Project Design Intent (PDI), compliance with contract requirements, proper system interface, constructability, and operability of the Project. The Contractor must provide a Project Submittal Schedule to include all required design submissions. The Project Submittal Schedule shall also include reasonable durations for full reviews. The reviews will include members of PENREN, FFD, the Family Steering Committee, and various regulatory agencies. The schedule shall be organized by the project phasing as determined by the Project Design Manager.

2.2 General Requirements

2.2.1 Existing Conditions

The existing conditions for the Project Site are provided for in drawings from two other PENREN construction projects -the Phoenix Project and the RDF –SAL. The Project Site spans the Phoenix and RDF-SAL sites; therefore drawings from both projects should be utilized. The existing conditions drawings are not record drawings, but should be used as a reference for initial planning and for purposes of preparing the proposal. The drawings notionally depict utility routings and are provided to the Contractor to understand the origin and terminus of the required utility services. They are not meant to signify the exact location of items as noted, nor signify the only acceptable design solution for the utility routings. Immediately upon Notice to Proceed, the Contractor shall focus upon certification and documentation of existing site conditions to include utility locations, geotechnical conditions and topographical data. The Contractor shall conduct all geotechnical and utility investigations and evaluations necessary to ensure the performance of the design. Revised, expanded, and/or new documents shall be produced as required to sufficiently describe the actual site conditions. Survey documentation shall consist of plans and diagrams with identification of items or areas requiring special protection during construction.

2.2.2 Demolition and Abatement

Prior to any construction-work taking place, it will be necessary to provide for the protection and safety of the traffic, both vehicular and pedestrian, and the work area. The Contractor shall provide this protection in accordance with the Commonwealth of Virginia’s Work Area Protection Manual, OSHA, and any other applicable codes.

Demolition will include the removal of all existing features that are not part of the final product. All demolition debris will become property of the Contractor and shall be promptly removed from the Pentagon Reservation. Demolished non-hazardous materials shall be recycled during the demolition process to the maximum extent practical.

The Contractor shall abate hazardous materials such as asbestos, lead, and other contaminants if encountered. Removed hazardous materials shall not be mixed with non-hazardous materials, recyclable and generic debris. Hazardous materials removed from the Reservation shall be disposed of in accordance with applicable federal, state, and local regulations governing the handling of these materials. Originals and one copy of all manifests shall be supplied to the Contracting Officer or their designated representative.

Fuel oil was used as a dust control for excavation during the original construction of the Pentagon, and there is a high probability that some level of contamination will be encountered during any soils work. Previous experience with the Commonwealth of Virginia, Department of Environmental Quality suggests the Contractor will be able to redeposit within the Pentagon Reservation soils below 500ppm Total Petroleum Hydrocarbons (TPH) so long as the material is stockpiled if reused as part of the Project in a manner that will prevent further migration. Soil used for re-grading or backfill of excavated areas must contain less than 50ppm TPH and less than 5ppm benzene based on VA Department of Environmental Quality (VDEQ) “Guidelines for the Disposal of Soil Contaminated With Petroleum Hydrocarbons.”

2.2.3 Governing Codes, Regulations, Permits, Approvals & Measurements

The Contractor shall comply with the current requirements of all applicable Federal, State, and local codes and regulations to include the Virginia Uniform Statewide Building Code (VUSBC), Virginia Statewide Fire Prevention Code, and Virginia State Health Code in the design and construction of this project. Current is defined as the code version in effect at the time of the initial award.

The Director, Real Estate and Facilities, is the authority having jurisdiction for building, fire, and life safety codes. Interpretation of Fire and Life Safety issues shall be coordinated through the FFD / Tech Staff / Safety and Occupational Health Group supporting the Director, RE&F.

The Contractor shall follow the Accessibility Guidelines of the Americans with Disability Act (ADA) and the Uniform Federal Accessibility Standards (UFAS). The most stringent code of these two shall govern in the event of a discrepancy.

2.2.3.1 Regulatory Agencies

The Pentagon is perhaps the most recognizable United States Government building in the world. It has been inseparably linked with the United States Military since its construction during World War II.

The Pentagon is a listed structure on the National Register of Historic Places and has been designated a National Historical landmark by the Secretary of the Interior. Five (5) distinguishing elements of the Pentagon were cited for special attention in the National Register nomination. The five elements are:

- The distinctive, equal length, five-sided design
- The five exterior facades
- The center courtyard and interior facades
- The terrace at the Mall Entrance (Mall Terrace)
- The terrace at the River Entrance (River Terrace)

Although the Memorial will have no direct impacts to any of the five distinguishing elements, its significance and proximity to the site of a recent national tragedy requires coordination, as directed by Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA). Therefore, all alterations, repairs or additions to the building must be respectful of the historic elements and the Secretary of Interior's Standards for Rehabilitation apply.

PENREN has received Master plan approval from all regulatory agencies for the activities associated with the renovation of the Pentagon. A supplement to the Final Environmental Assessment of May 28, 1991 (EA) and the Pentagon Reservation Master Plan has been prepared for this Project. Site approval for the Memorial Park, in accordance with NHPA, has already been secured by the United States Army Corps of Engineers.

Prior to Notice to Proceed (NTP), the portion of the Project Site known as the Memorial Gateway and drawings of the winning Concept Design will have been submitted to the regulatory agencies for approval at the concept level. Deviations or additions to the approved Master plan and/or Supplement to the Final EA will require review and/or approval by the relevant regulatory agencies. The Contractor will be responsible for a design that must receive approval for all of its elements/features affecting historic considerations of the building from the National Capital Planning Commission (NCPC), the Commission of Fine Arts (CFA) and the Commonwealth of Virginia Department of Historic Resources (SHPO). The Contractor shall work in conjunction with the Historic Preservation Specialist at PENREN to provide the required drawings and supporting material necessary to obtain all required approvals.

2.2.3.2 Units of Measurement

All submittals to the Government shall be in English (Imperial) measurements.

2.2.4 Safety

Worker safety is of paramount importance to the Pentagon Renovation Program. The Contractor is required to develop a Safety Plan and program that assures focused attention to this critical effort during the entire duration of the project. The Safety Plan, which shall be submitted and approved prior to construction start, should comply with requirements of US Army Corps of Engineers Manual, EM 385-1-1 (<http://www.usace.army.mil/inet/usace-docs/eng-manuals/ceso.htm>), OSHA regulations, and PENREN requirements for PPE. All Contractor supervisory personnel are considered safety officers, in addition to a

designated, full-time Safety Manager who shall be present whenever construction is underway. The Contractor's Safety Manager shall enforce the approved safety plan and ensure that all construction workers have received adequate, relevant safety training. For non-English speaking employees, there must be a bilingual foreman on-site who can effectively communicate with the employee. All Contractor personnel should also be aware that the Pentagon Defense Protective Service (DPS) serves as the first-response coordinator for all Emergency services including response from the Pentagon Medical Clinic, Police, Fire and Ambulance. In Case of Emergency, call (703) 697-5555 first. Calling 911 will result in slowed response, as Arlington County Virginia Police/Fire will have to coordinate with DPS for access.

The Contractor shall investigate all accidents and immediately report an accident involving a fatality, major injury or property damage greater than \$200,000. All accidents that involve lost workdays or property damage greater than \$2,000 shall be reported within 24 hours. For all reportable accidents, submit a completed ENG Form 3394 within 72 hours of the occurrence. Submit monthly OSHA Log of injuries (29 CFR 1926) and the monthly man-hour exposure report (EM 385-1-1). If the accident has the potential to result in a fatality, permanent disability or property damage in excess of \$200,000, the site shall be secured and remain undisturbed, except for rescue procedures, until released by the Contracting Officer.

Immediately notify the Contracting Officer when an OSHA Compliance official arrives at the work site to inspect. During construction, ensure there is no migration of contaminants, liquids, and/or odors into occupied spaces. In the event any contaminants, liquids, and/or odors are detected in occupied spaces, all activities that could generate the conditions(s) shall stop and not resume until the contaminants have dispersed and the cause remedied.

2.2.5 Noise Restrictions

The Contractor shall refrain from all construction operations producing noise levels greater than 80dba within the Project site and surrounding areas between the hours of 6:00am to 6:00pm, Monday through Friday. The Contractor shall not drive piles on weekdays during the hours of 8:00am and 8:00pm. Violations of the noise restrictions are taken very seriously by PENREN and can constitute cause for contract termination.

2.2.6 Stoppage for Official Ceremonies

The Contractor shall provide for work stoppages as directed by the Contracting Officer for official ceremonies at the Pentagon. This will be dealt with on a case-by-case basis. For proposal preparation purposes, the contract should assume 40 hours of delay as a result of official ceremonies each year.

2.3 Commissioning

To ensure a fully functioning Pentagon Memorial, with systems that meet building mission, design intent and quality requirements, the Contracting Officer (CO) will require the implementation of a commissioning process for this Project. Commissioning (Cx) is a proactive, systematic, and rigorous process of assuring by documentation, functional testing, and training, from the design to a minimum of one year after Substantial Completion, that all systems perform interactively in accordance with the Government's operational needs and the design documentation and intent. This process judges correct performance of both individual systems and systems operating interactively according to the project design intent.

The Contractor and OGCs as necessary shall supply the personnel and technical resources needed to execute project Commissioning activities with the advisory oversight of the Government's Commissioning Specialist (CS).

2.4 Turnover Process

2.4.1 General

A well-coordinated and executed process to prepare the Project for use is critical. The Contractor will be responsible for all milestone dates and activities needed to arrive at the required date of Construction Completion. A written Turnover Plan shall be submitted and approved by the Government prior to starting construction. The contractor will propose the dates and durations for the activities of this section.

Construction Completion is defined as the point at which all punch list items have been completed to the satisfaction of the Government and the project is ready for its intended use.

2.4.2 Training and Systems O&M Manuals

Before the final Cx inspections, the Contractor shall ensure that all systems training is complete and appropriate Systems Operations and Maintenance Manuals (SOMMs) are provided to the Commissioning (Cx) team for review and acceptance as required by the Cx Plan (Section C2.4). This will allow FFD staff to become knowledgeable of the equipment and systems they will be inspecting and for which they will be responsible following acceptance. The SOMMs shall include a list of responsible contractors and subcontractors with contact telephone numbers for warranty on each of the systems.

2.4.3 Functional Performance Testing

The Government requires full inspection and testing of systems (e.g. plumbing, power, energy management, and control) in preparation for turnover. The primary interest is in proving the systems are fully functional and meet all requirements of the design and O&M requirements. Functional performance tests of all systems will take place before the Pre-Final Inspection to ensure the systems will be fully operational. The Contractor is responsible for ensuring that all needed performance tests are conducted prior to the Pre-Final Inspection.

Systems will not be re-inspected during the Pre-Final Inspection. At the completion of all Cx inspections, FFD will be ready to accept the systems for operation and maintenance as part of the transition from PENREN to FFD.

2.4.4 Construction Completion and Inspections

No less than 15 calendar days prior to date of Construction Completion, the Contractor will conduct a Pre-Final Inspection. The inspection may produce a Punch List of all items requiring additional work or modification prior to acceptance by the Government. There will be only one Punch List maintained by the Project team and no additional items will be added to the Punch List between the Pre-Final Inspection and the Final Inspection. The Contractor shall update work on all Punch List items at a daily meeting held on-site until items are complete. The Contractor should expect the attendance of the PENREN Program Manager at the daily meeting. All Punch List items must be complete and accepted by the Government for a determination of Construction Completion.

2.4.5 Transition to FFD

After determination of Construction Completion and turnover to PENREN, the Contractor shall ensure all project documentation; manuals, reports, etc. are complete and accurate to allow for the transition of the Project from PENREN to FFD within 30 calendar days.

3.0 PROJECT DESIGN PROCESS REQUIREMENTS

The Contractor shall design and construct the Pentagon Memorial in accordance with the Performance Criteria, Design Process Requirements, Sustainability Goals, and Commissioning Requirements described below and the Project Design Program (PDP) described in Section 4.0.

3.1 Performance Criteria

The Contractor shall meet or exceed the Performance Criteria provided herein for the systems of the Project.

3.1.1 Pool System

Each individual Memorial Unit pool will contain about 17 cubic feet (approx. 130 gallons) of water. Clear, filtered and sanitized water will enter each pool through controlled inlet feeds on the wall, below the water's surface, under the cantilevered bench. This inflow of about 8 to 10 gallons per minute, without air bubbles or excess velocity to create unwanted turbulence at the water's surface, is to flow uni-directionally to the opposite short wall of the pool. The water shall be continuously recirculated (the surface shall move gently but noticeable) to unobtrusive skimmers and overflow slots (integrated into the final fabrication / assembly of the Memorial Unit) at a velocity of from 9" to 12" per second.

Supply and return lines feeding the pools shall be valved to assure the required flow. All lines (gravity drain and pressure supply) shall be sized to maintain a flow not to exceed 6 feet per second.

The pool system shall be designed to:

- Allow for winter operation using most stringent weather data for Reagan National Airport, ASHRAE Handbook, 2001 Fundamentals;
- Remove all visible particles;
- Provide water to the pools that must preclude growths of algae, bacteria or mosquitoes without chemical odors;
- Provide for the complete volume of water within each pool to be recirculated a minimum of four (4) times within a 24-hour period;
- Operate on zones, which would allow for maintenance/shutdown/cleaning of pools in a manner that would not require the entire system of pools to be taken out of service at the same time.

3.1.2 Exterior Lighting and Control

3.1.2.1 Integrated Pool Lights

Lighting shall be low voltage and photometrically controlled. All electrical work must be fully grounded in accordance with applicable codes.

3.1.2.2 Memorial Park and Memorial Gateway

Contractor shall provide site lighting in accordance with standards from the Illuminating Engineering Society of North America (IESNA).

3.1.3 Electrical Distribution System

Provide a complete electrical distribution system. Include components such as grounding, enclosed switches and circuit breakers, and panel boards.

The contractor shall use electrical systems and equipment that are energy efficient, reliable, flexible, and easy to maintain. The equipment selected will be commercially available “off-the-shelf.” Installation of equipment will be based on manufacturer’s recommendations and industry standards. Equipment furnished will meet NEMA, UL, and ANSI standards.

3.1.3.1 Lightning Protection

Provide lightning protection systems per code where required.

3.2 Energy Efficiency and Environmental Design

3.2.1 General Requirements

The Government seeks a Project that promotes energy efficiency throughout all phases. The Contractor shall consider energy efficiency during the design of all Project systems and look for opportunities to conserve energy during construction as well.

It is the Government’s objective to incorporate sustainable design principles in this project to the maximum extent possible within the project constraints and the PDI. These principles are described in Executive Order 13123, Greening the Government through Energy Efficient Management. This and other sustainable design references are available at <http://www.epa.gov/oppt/epp/gentt/textver/resources.html>.

As a minimum requirement for this project, the Contractor shall provide a complete erosion and sediment control plan, which complies with the Commonwealth of Virginia Erosion and Sediment Control Manual and all other applicable codes and regulations. The construction site must be maintained in a manner to ensure the proper function of the Erosion and Sediment Control Plan

The Contractor must meet or exceed the goals and objectives stated in Executive Order 13101 Greening the Government through Waste Prevention, Recycling, and Federal Acquisition.

3.2.2 Environmentally Preferred Products (EPP)

These are products that reduce effects on human health and the environment which consider raw material source, production, manufacturing, packaging, distribution, use of recovered materials, reuse of product, operation, maintenance, disposal and recyclability. These attributes must also be balanced with the overriding PDI and the Program goals of durability, cost effectiveness (based on life cycle cost analysis) and reliability. The Contractor shall also comply with requirements of the comprehensive procurement guidelines, which can be obtained at <http://www.epa.gov/epaoswer/non-hw/procure/>.

The following are specific EPP goals that are targeted for the Pentagon:

- No materials or building components that were manufactured with ozone-depleting compounds, including CFCs and HCFCs.
- No materials or building components that were manufactured with, or that contain Polyvinyl Chloride (PVC) or other chlorine –based compounds.
- No materials that contain Volatile Organic Compounds (VOC). In the cases such as roof assemblies and paints where zero VOC content is not available, low VOC materials will be acceptable; but VOC content must be documented and coordinated prior to purchase and installation.

Use building materials and products that reduce greenhouse gas emissions by specifying recycled-content, bio-based, and/or industrial by-products vs. virgin materials. A 35% reduction is the goal when comparing each specified product to a comparable product that is not an EPP but meets the performance requirements.

3.2.3 Waste Management

The Contractor shall be required to initiate and implement a Construction & Demolition Site Recycling program to divert a minimum of 50% of all recyclable waste materials from land filling or incineration, and should include mixed metals, clean wood, cardboard, asphalt, concrete, land clearing debris, beverage containers and other materials for which markets exist.

4.0 PROJECT DESIGN PROGRAM (PDP)

The Project Design Program (PDP) includes six (6) Primary Design Elements (PDE); the Memorial Unit, the Age Line, the Age Wall, the Perimeter Benches, Landscaping, and the Memorial Gateway. The Primary Design Elements are described separately but are not independent of each other. Site Work and the Pool System requirements make up the balance of the PDP. The materials of the Competition Stage Two submission for the winning Concept Design (APPENDIX C.6) and the following PDP narratives constitute the Project Design Intent (PDI).

4.1 Site Work

4.1.1 Grading

The site shall be graded to accommodate the PDI.

4.1.2 Drainage

Design low maintenance, durable drainage structures, which shall provide the maximum capacity and the least visual impact on the site. Site drains may include surface drains (hardscape and lawn areas) and sub-surface drains (planting areas) and be designed to take excess irrigation water as well as rain water into the existing storm drain system.

4.1.3 Lighting

Provide an energy-efficient site lighting system throughout Project Site (Memorial Park and Memorial Gateway) to ensure safe movement of pedestrians. Fixtures within the Memorial Park shall be proposed by Contractor and approved by the Government. Fixtures within the Memorial Gateway shall be “Washington” standards. All site lighting shall be photometrically controlled.

4.2 Pool System

Concept Design Intent: As depicted in the renderings and drawings, each personalized memorial unit will have its own reflecting pool. This water element has the dual purpose of contributing to a peaceful, contemplative environment at each individual Memorial Unit, as well as for the Memorial Park as a whole. The controlled surface movement of the water is to interact with natural sunlight during the day and with artificial light at night. This light will bounce off the clear-anodized underbelly of the cantilevered aluminum bench portion of the individual memorial unit, creating soft light shadows on the aluminum itself, as well as on the surrounding gravel surfaces.

The water within each individual memorial unit pool must be maintained at a level of approximately 1-1/2” inches below the surrounding ground surface. The continuous visible movement of the water within the pool must be soft and quiet. The water itself must be clear and free of debris.

Modifications to the materials, functionality and/or layout described herein shall be coordinated and approved by the Concept Designers.

Provide a fully functioning water circulation system to include the following.

4.2.1 Equipment Control Center (ECC)

Provide an Equipment Control Center (ECC) space to:

- House pumps, filters, sanitizers, sensors, controls, and all other equipment that is required to operate and maintain the pool system.
- House panels and equipment required for the electrical system.

The ECC space shall be designed:

- To be a fully code-compliant, enclosed, and securable structure with applicable heating, ventilation and lighting.
- To allow for practical ingress and egress of O&M personnel and supplies.
- To be large enough to house all required equipment safely, logically, and in accordance with applicable codes.
- To permit ease in service, maintenance and repair/replacement of all components by O&M personnel.
- To include drainage to prevent flooding from rainfall or mechanical failure.

There shall be no visual or audible suggestion of the mechanical/electrical equipment or infrastructure anywhere within the Memorial Park. It is anticipated that the ECC space could be located within the Memorial Gateway or the Buffer Zone.

4.3 Memorial Unit (PDE #1)

Concept Design Intent: At the collective heart of the Pentagon Memorial is the individual **Memorial Unit**. 184 Memorial Units, each dedicated to an individual lost on September 11th, are to be strategically organized and placed across the approximately 2-acre site. Each Memorial Unit is a complex yet elegantly simple element that performs several tasks and is several things at the same time. It is an individual reflecting pool of water that glows with light at night, the place for the permanent inscription of each individual victim's name, a place to sit and place mementos. Its slender cantilevered form and the Memorial Unit's multidimensional integrity are rooted in the fabrication of its form. An extremely high level of coordination, research and development is required for the production of the Memorial Unit – its articulated fabrication; structural performance, systems integration and all resultant effects are unprecedented in a Memorial Park setting.

Modifications to the materials, functionality and/or layout described herein shall be coordinated and approved by the Concept Designers.

Provide and install one hundred eighty-four (184) Memorial Units.

4.3.1 Fabrication – Cast Aluminum Memorial Unit

No drawings are required for the production of the master pattern from which the Memorial Unit is cast in aluminum. The fabricator for the Memorial Units shall demonstrate an extremely high level of precision and quality.

Data from the three-dimensional computer model provided by the Government shall be read directly by a 5-axis Computer Numerically Controlled (CNC) milling machine. A “master” pattern, or positive master form, is created by milling / sculpting sections out of high-density foam. These sections will be assembled and sanded smooth to create one cohesive pattern from which the cast piece will be made.

Such a process allows not only for prototypes to be made rapidly for physical inspection and required adjustments prior to the casting production line, but also ensures a high level of quality control and efficiency in fabrication. Once the “master” pattern is developed, the casting process moves rather quickly.

Upon removing the cast aluminum from the mold, each unit will be sanded and buffed smooth. Lastly, the Memorial Unit will be clear anodized, protecting the aluminum from fingerprints, scratches and the elements.

It is the responsibility of the Contractor to assure that all 184 Memorial Units are equal in quality, precision, finish, and are free of any defects.

4.3.2 Prototyping, Load Testing, and Full Scale Mock-ups

An adequate number of CNC patterns and finished prototypes must be iteratively made, allowing for rigorous quality control / physical load tests and adjustments to be made in the computer model from one iteration to the next. An acceptable level of deflection is to be established, and a systematic regiment of physical load tests must be pre-established to examine the strength, durability and quality of the cast aluminum Memorial Unit against the acceptable deflection dimension. Load resistance, deflection and structural durability shall be verified with a test procedure that entails repetitive loading (of a conservatively substantial magnitude) over an extended period of time. Further, these early developmental prototypes must be clear anodized and incorporate the Polyester Composite Matrix mix (see 4.3.5), thus producing a full scale working mock-up to test the integration of the Memorial Unit’s components. Once approved by the Concept Designers, the full-scale working mock-up shall be delivered to the Pentagon for Government approval.

Ultimately, tests shall be conducted on the full-scale mock-up to ensure that all materials and connections are integrally durable over extensive loads, periods of time and radical temperature differences.

4.3.3 Functional Specificity and Articulation

The Memorial Unit is a highly articulated and refined element – its programmatic and functional specificity is built into its form. Plumbing “nostrils” and other required elements, conduit channels and the light cove are all integrated into one solid cast of aluminum. The necessary structural cross section provides the pan within which the polyester composite matrix is poured. Any additional required surface treatments - bolt-holes, reinforcing dimples, ribs, shelves, reveals, notches, etc. – will be highly specific to the detail / issue at hand. All of these articulations are to be resolved and developed during the development phase, designed in the computer, and physically tested through rapid prototypes at full scale. In other words, any functional problem that is introduced or discovered during the development phase will be readily absorbed by the Memorial Unit’s form through an iterative design, development and testing process.

4.3.4 Structural Rigidity

Though a sleek and slender cantilevered condition, the Memorial Unit is incredibly strong and rigid.

A precise and comprehensive engineering analysis must be performed prior to and during the rapid prototyping process. The current full-scale computer model is to undergo a finite element analysis, thus producing an annotated summary pinpointing critical stress-zones across the structural surfaces of the cast aluminum Memorial Unit. This analysis will not only help to optimize the amount and location of aluminum within the cast, but will also provide the performance parameters within which all integrated systems (plumbing “nostrils”, pipe fixtures, light fixture, fasteners, etc.) must work within. As previously stated, full-scale prototypes of the Memorial Unit will undergo extensive and rigorous physical tests to verify load resistance and overall durability.

4.3.5 Polyester Composite Matrix

As shown in the cross sections, an adhesive mixture is poured into the Memorial Unit, allowing the gravel to be fixed in place as the Memorial Unit “grows” out of the surrounding stabilized gravel field.

The composite matrix is to be a precise ratio of a polyester-resin or epoxy material, glass fiber and gravel aggregate (to match the surrounding stabilized gravel). This matrix must be durable, waterproof, UV stable, non-toxic and possess the material and color qualities necessary to polish the surface smooth at the horizontal seating portion of the Memorial Unit, attaining a “terrazzo” finish that matches the surrounding field in color. All other aggregate in the Memorial Unit is to be adequately exposed and permanently affixed in place – its texture is to match that of the surrounding stabilized gravel field.

Research, development and physical testing will be performed to determine the recipe for the matrix in conjunction / coordination with the prototyping / testing regiment set up for the cast aluminum Memorial Unit (see above). The point of contact between the composite matrix and the aluminum is among the most critical of issues to ultimately resolve - the coefficient of expansion of the composite matrix shall match as closely as possible that of the cast aluminum Memorial Unit. This will ensure that the composite matrix moves in unison with the aluminum as temperatures change throughout the day, and throughout the seasons, thus ensuring a beautiful, watertight joint between the two different materials. Expansion joints and strips, if any, must be practically invisible.

As the modulus of elasticity of the composite matrix will differ from that of the cast aluminum, there will be no composite structural action between the two materials. However, the material properties of the composite matrix, its reinforcement, flexibility, coefficient of expansion and its connection to the cast aluminum must be such that it does not crack, break or deteriorate under any circumstance.

4.3.6 Integrated Pool-Light

As the individual reflecting pools will glow with artificial light at night, a waterproof light fixture and enclosure will be integral with the Memorial Unit’s form. The design development of the pool-light must be tied directly to the development and refinement of the memorial unit through the rapid prototyping process. Access to the light fixture and cove will be from within the volume of the reflecting pool – whether the pool’s water has to be drained or not is provisional with the specific light fixture type and enclosure / cove detail.

4.3.7 Engraved Names

At the most slender face of the cantilever is an engraved name of the individual to whom the individual Memorial Unit is dedicated.

There are several cases in which the lives of more than one member of a family were lost at the Pentagon. In these cases the name(s) and birth-year(s) of the other family member(s) will be engraved onto the horizontal plaque portion of the memorial unit (directly above the light cove), referencing the location of their Memorial Unit by age-line within the Memorial Park. These engraved names will be just below the surface of the water in the reflecting / glowing pool. Otherwise, this plaque portion of the Memorial will remain blank.

4.3.8 Pre-installed Assembly / Site Installation

The Memorial Unit is sandwiched by two 1/4” thick aluminum plates that are as long in dimension as the Memorial Unit itself. By permanently affixing the aluminum plates to the sides, whether through mechanical fasteners, welded connections or welded conditions (or a combination thereof), the volume of the pool is defined. At this point, the Memorial Unit is ready to be bolted to its below-grade foundation

and spliced into the aluminum Age Line.

4.4 Age Lines (PDE #2)

Concept Design Intent: Oriented along the trajectory of American Airlines Flight 77 and spanning the site from perimeter to perimeter, the **Age Lines** are the organizational strategy of the Memorial Park as a whole. Each age line represents a birth year of each of the 184 victims; based on the birth year of the victim, their individual Memorial Unit is located along that age line. These lines ultimately serve as the “directory” or “map” with which the visitor will locate the individual Memorial Units, which are qualitatively organized along the Age Lines according to the victims’ birth dates.

Modifications to the materials, functionality and/or layout described herein shall be coordinated and approved by the Concept Designers.

Provide and install Age Lines throughout the Memorial Park.

4.4.1 Assembly / Installation

Each “age line” consists of two parallel 1/2” thick aluminum prefabricated folded or welded plate assemblies separated by 14 inches. They are rigid service troughs, between which the Memorial Units are located and locked in place.

Despite pending grading and drainage implications, the age lines must remain straight across the entire site. At each Memorial Unit, a segment of aluminum 1/4” plate is fastened to the Unit to define the reflecting pool’s volume – the assembled Memorial Unit is a segment of the age-line continuum.

The age lines are to be inlaid flush with the stabilized gravel field. As they reach each perimeter condition, the age lines continue up the vertical face and along the top of the perimeter benches – maintaining an inlaid flush condition.

At the concept level, the Age Lines were envisioned to act as service troughs with stiffener plates that accommodate for all electrical and plumbing lines. Actual routing of service lines shall be proposed by Contractor and approved by the Government. The Contractor shall propose the routing of service lines as part of the Engineering System Concept submission described in Section L.

4.5 Age Wall (PDE #3)

Concept Design Intent: The **Age Wall** runs along the western edge of the site and its purpose is dual-fold. The growing height of the wall corresponds to the growing birth years as one moves south to north within the Park - this serves as an indicator of the site’s organization to those passing by along the adjacent highways. At the same time, the age wall reaches its tallest dimension as the RDF Secure Access Lane encroaches upon the Memorial Park, hence serving as a necessary buffer between the quiet contemplative environment of the Park and the movement and noise of the adjacent roadways.

Modifications to the materials, functionality and/or layout described herein shall be coordinated and approved by the Concept Designers.

Provide and install Age Wall.

4.5.1 Assembly / Installation

The Age Wall is made of exposed aggregate concrete wall sections. Pre-cast, tilt-up or poured-in-place options shall be explored, as the dimensions and configurations of every segment of the Age Wall vary across the site. The aggregate is exposed on both faces and the top of wall - the aggregate is to match that of the stabilized gravel ground cover.

Revealed expansion / control joints occur in alignment with the aluminum age lines that demarcate the entire site – to align and correspond to the aluminum Age Lines, the reveals are 1/2” wide and deep.

The Age Wall shall have integral planter and bench

4.6 Perimeter Bench (PDE #4)

Concept Design Intent: The **Perimeter Bench** provides a continuous and smooth seating surface for visitors to the memorial. The Perimeter Bench also serves as a planter for ornamental grasses, acting as a soft screen demarcating the boundary of the park. The 1/2” thick aluminum Age Lines that organize and demarcate the site continue up the vertical face and over the horizontal seating surface of the bench. – the aluminum is to be inlaid flush with the polished surface of the bench. A high degree of precision must be deployed in the construction and assembly of the perimeter benches as they invite constant interaction from visitors to the Memorial.

Modifications to the materials, functionality and/or layout described herein shall be coordinated and approved by the Concept Designers.

Provide and install Perimeter Benches.

4.6.1 Assembly / Installation

The bench shall be surfaced by synthetic terrazzo - a polyester composite matrix composed of resin / epoxy, gravel aggregate (to match the stabilized gravel field) and glass fiber. This composite mix / recipe must be taken into consideration, as the coefficient of expansion of the terrazzo mix must be as close as possible to that of the aluminum enabling all joints between the two materials to be as tight as possible in all configurations. Further, these joints must be water tight so as not to allow water penetration and the ice-freeze issues associated with it.

All aluminum is to be polished flush with all surfaces of the perimeter bench. All joints are to be as tight as possible – expansion strips, if introduced, must be practically invisible, as are all physical connections and fasteners required for this detail.

Perimeter Benches shall have integral planters.

Perimeter Benches shall have inlaid aluminum “birth years” at the end point of each Age Line.

4.6.2 Security Performance

The design and construction of the Perimeter Benches must satisfy the requirement of PFPA to provide for physical constraints that keep visitors from approaching any closer to the Pentagon building than the boundaries of the Memorial Park. Design shall require review and approval by PFPA prior to construction

4.6.3 *Lighting*

In conjunction with the overall lighting scheme, the inlaid aluminum birth years shall be illuminated at night.

4.7 **Landscaping (PDE #5)**

Provide hard and soft landscaping for the entire Project Site (Memorial Park and Memorial Gateway).

4.7.1 *Pedestrian Surfaces*

4.7.1.1 Memorial Park

Concept Design Intent: A ground cover of stabilized gravel is intended to contribute to the sensuous, tactile environment of the Memorial Park. The gravel is hard enough for one to roll a wheelchair or stroller over, yet loose enough for the visitor to hear his/her own footsteps and the footsteps of others nearby. The porous quality of stabilized gravel system allows for two things; first, the trees can be planted and grow without a visible protective grating at the base of the tree trunk; and second, it is intended to assist in keeping the site as flat/planar as possible.

Modifications to the materials, functionality and/or layout described herein shall be coordinated and approved by the Concept Designers.

Provide and install pedestrian surfacing throughout the Memorial Park.

A system of stabilizing containment mats shall be used to hold the gravel aggregates in place. These mats shall remain invisible under a top layer of gravel. Aggregates are to be angular in cut and of maximum size allowed by system/manufacturer's specifications— color and type to be specified in conjunction with the development of the polyester composite matrix.

This stabilized gravel system shall be porous enough to provide for the sustained livability of the trees. It is anticipated that there will be no need for metal protective grating at the tree trunks.

All pedestrian surfaces shall be UFAS and ADA compliant.

4.7.1.2 Memorial Gateway

Concrete shall be used for all surfaces intended for pedestrian use within the Memorial Gateway. A sidewalk must be provided around the Memorial Park to connect the areas of the Reservation at both ends of the park without requiring entrance into the park.

Provide logical connections to the existing Reservation pedestrian walks as they cross into the Project Site.

4.7.2 *Trees and Plant Material*

4.7.2.1 General

Every effort shall be made to keep the area as secure as possible, and to prevent unwanted intrusion. Trees, shrubs, and other plants should be designed to keep views open and avoid hiding places. Provide soil mix (topsoil) to a two-foot depth at all areas to receive sod.

The landscape plan and proposed soil mix shall be submitted to the Government's Horticulturist for approval. The Contractor shall obtain Government approval prior to the installation of any tree or plant material.

4.7.2.2 Memorial Park Trees

Concept Design Intent: A grove of trees is intended to provide a vivid canopy of color and light and shade throughout the site. To create an intimate environment, the maximum appropriate number of trees will be clustered in accordance with the Memorial Units, providing a comfortable amount of shade to each Unit, while allowing enough sunlight to penetrate the canopy, creating dynamic lacey shadows on the ground.

Each tree type currently being considered (Paper Bark Maple, Trident Maple, and Field Maple) has a, brilliant, late falling canopy maintaining its foliage late into the fall and early winter months. The texture of the bark, the shape and color of the leaves, and the overall canopy spread, together will compose a most exquisite display of nature. The trees will seemingly grow straight out of the gravel surface, needing no visible protection or drainage grate.

Modifications to the materials, functionality and/or layout described herein shall be coordinated and approved by the Concept Designers.

Install Government-provided trees throughout the Memorial Park.
The appropriate drainage, soil and planting conditions shall be proposed by the Contractor and approved by the Government to insure sustainability of the trees.

4.7.2.3 Memorial Park Ornamental Grasses

Concept Design Intent: The perimeter conditions of the Memorial Park, as mentioned above, are to serve as a soft but impassable barrier that satisfies the security requirements deemed by the Project.

The natural quality of wild ornamental grasses will provide a soft edge to the site - type and color to be specified. During the off-season, the grasses must be cut back to allow for new growth.

Modifications to the materials, functionality and/or layout described herein shall be coordinated and approved by the Concept Designers.

Provide and install ornamental grasses for the Perimeter Benches and Age Wall.

4.7.2.4 Memorial Gateway Landscaping

The landscaping shall compliment the design of the Memorial Park. Native plantings shall be used, in particular those already present in adjacent areas.

Install Government-provided trees throughout the Memorial Park.
Provide and install sod in all areas within the Memorial Gateway intended for grass.

4.7.3 Irrigation

Provide irrigation for all trees and plant material (including sod and ornamental grasses).

A portion of the site is served by an existing irrigation system supplied by a potable water source. The work of this Project will require modifications to this system. Modifications must be compatible and consistent with the existing site irrigation system. Proposed modifications shall be submitted to the Government for approval no less than 30 days prior to the start of work.

Provide hose bibs throughout the Project Site for the washing of pavement, benches and other fixtures. Hose bibs should be placed for maximum efficiency assuming use of a 100-foot hose. Hose bibs and supply lines shall be protected from freezing. Locations of hose bibs must be coordinated and approved by the Concept Designers prior to submitting to the Government for approval.

4.8 Memorial Gateway (PDE #6) (OPTION)

Concept Design Intent: The Memorial Gateway is envisioned as a functional and interpretive landscaped buffer between the Pentagon's South Parking lot and the Memorial Park. The Memorial Gateway shall serve as the primary visitor entry point into the Memorial Park

The materials, functionality and/or layout of the elements that make up the Memorial Gateway shall be coordinated and approved by the Concept Designers.

Provide and install the following within the Memorial Gateway.

4.8.1 Interpretive Board

An Interpretive Board, protected from the elements, to provide the visitor with information to supplement their visit to the Memorial.

Size, design, and content will be provided to the Contractor once coordination by the Concept Designers, the Family Steering Committee, and PENREN has been completed.

4.8.2 Donor Plaque

A Donor Plaque to display the names of donors who make a significant contribution towards the construction of the Memorial.

Size, design, material and location will be provided to the Contractor once coordination by the Concept Designers, the Family Steering Committee, and PENREN has been completed.

4.8.3 Visitor comfort amenities

Drinking fountains (2) cooled.
Benches (4).
Bike Racks (for min. 10 bikes).
Trash Receptacles, bomb-proof (2).

4.8.4 Entry Sign

An Entry Sign to mark the formal entry point for visitors.

Location, size, design, and materials will be provided to the Contractor once coordination by the Concept Designers, the Family Steering Committee, and PENREN has been completed.

4.8.5 Reservation Way-Finding Signage

Way-finding signage to direct visitors to the Memorial Park from three primary directions.

Utilize the signage design and graphic standards from the recently completed Metro Entrance Facility project to:

- Provide at a minimum, two directional signs between the Metro Entrance Facility and the Memorial Park;
- Provide at a minimum, two directional signs along the Route 27 bike / walking path between the Route 110 overpass and the Memorial Park; and
- Provide at a minimum, two directional signs between the I-395 pedestrian tunnel and the Memorial Park.